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THE VALUE OF THE WASSERMANN REACTION

AS INDICATED BY POSTMORTEM INVESTIGATION IN THREE HUNDRED AND THIRTY-ONE CASES AT BELLEVUE HOSPITAL *

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AND

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First Lieutenant, M. R. C., U. S. Army

WITH THE COLLABORATION OF

HELEN BITTMAN

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NEW YORK

When the Wassermann reaction was introduced, it was widely embraced as marking the end of all diagnostic difficulties in syphilis. In addition, it caused to be included in the already comprehensive domain of syphilis conditions that previously were regarded as independent or doubtful affections, and it promised to lay the foundations of a new eugenics by the exposure of latent but transmissible syphilis in either or both prospective participants in an otherwise desirable procreative venture. As time progressed, instances began to multiply in which the reliability of the reaction was brought into question. By this time, however, the serology of syphilis had become identified with almost every thought devoted to the contemplation of this far-reaching disease; and while, at the present moment, it still occupies a place of profound importance in the study of syphilis, there seems to be a growing tendency to moderate those views which once were attacked only on a charge of heresy.

In the pathologic laboratories at Bellevue Hospital we have used the Wassermann reaction in the diagnosis of syphilis for a period of nearly seven years, during which time about 75,000 serums have been examined, representing a total of nearly a hundred thousand reactions, the cholesterin-fortified antigen having been exclusively employed for the first four years, and both the cholesterin and the crude alcoholic antigens for the past three years. From the outset the Wassermann laboratory has been under the supervision of pathologists who, with their assistants, have been specially trained in serologic work. Every effort has been made to safeguard the accuracy of the reports. In view of the doubt concerning its reliability as a diagnostic sign of syphilis, not only in our own laboratory but elsewhere, we have attempted to correlate the results of the Wassermann reaction with postmortem findings, keeping constantly before us the fundamental conception that syphilis is an inflammatory process, that it is characterized by definite and diversified structural alterations, and that without anatomic changes there is no syphilis. However indispensable this conception may be as a point from which to start and around which to build, the pathologist whose routine brings him into intimate and frequent contact with postmortem investigation can scarcely remain insensible to the fact that certain anatomic changes in subjects of suspected syphilis are sometimes exceedingly difficult to interpret, not only in the organs as they come under orderly examination at necropsy, but also in the subsequent microscopic investigation of individual tissues, even when special methods of differentiation are employed.

There were 331 cases in which the results of the Wassermann reaction were correlated with the anatomic findings in the same subjects investigated postmortem. In 204 cases no anatomic signs of syphilis were detected at necropsy, and the Wassermann reaction during life was negative, or was reported as "weakly positive" or "doubtful." The cholesterin-fortified antigen was used in every case. In 158 cases both the cholesterin and alcoholic antigens were employed. In a considerable number of cases, as will be shown later, no syphilis was demonstrable at necropsy, and yet the Wassermann reaction during life was positive. Of the latter cases it may be said, of course, that syphilis was present, but that we failed to find it at necropsy. The possibility of overlooking syphilitic lesions in isolated cases is not to be denied. However, it is not fair to assume that we overlooked syphilis in one series of cases in which the Wassermann reaction during life was positive without assuming that we overlooked it in another series in which the reaction during life was negative. In those instances in which the Wassermann reaction was positive, we employed exactly the same methods of excluding syphilis at necropsy as were employed in those cases in which the Wassermann reaction during life was negative, and we assume that we were no more frequently guilty of error in one series than in the other, particularly since the results of the Wassermann reaction, whether negative or positive, had nothing whatever to do with the postmortem exclusion of syphilis, the absence of which was postulated purely on the basis of failure to detect the naked eye changes by which the disease is characterized. We repeat that, in the absence of demonstrable syphilis, the existence of syphilis is not to be denied. We do not feel called on, however, to admit more than a small percentage of failures in view of the universally recognized fact that syphilis

* From the pathologic laboratories of Bellevue and Allied Hospitals, Dr. Charles Norris, Director.

is a disease of ambitious anatomic proportions and that, while it may undergo modifications spontaneously or under treatment, it usually does so at the expense of structural legacies which, in the majority of cases, are characteristic and readily identified at necropsy.

Unfortunately, it was not practicable for us to subject every tissue to special methods of staining designed to bring out the *Spirochaeta pallida*. Such an investigation, in the absence of otherwise recognizable syphilitic lesions, might have been of value in helping to avoid mistakes. With other pathologists who have investigated the question at length, one of us (Symmers) has secured only negative results in a numerically and otherwise comprehensive series of

TABLE 1.—CASES ON WHICH REPORT IS BASED

Cholesterin Antigen	Alcoholic Antigen	Necropsy Findings
Positive	Negative	No signs of syphilis
Positive	Negative	No signs of syphilis
Positive	Negative	Atrophic pretibial scars; hepar lobatum
Positive	Negative	No signs of syphilis
Positive	Negative	No signs of syphilis
Positive	Negative	No signs of syphilis
Positive	Not used	Ulcerative cutaneous syphilids
Positive	Not used	Syphilitic aortitis; adenopathy
Positive	Negative	No signs of syphilis
Positive	Negative	No signs of syphilis
Positive	Negative	No signs of syphilis
Positive	Not used	No signs of syphilis
Positive	Not used	Smooth indurative atrophy of tongue, with scarring of epiglottis
Positive	Not used	No signs of syphilis
Positive	Not used	No signs of syphilis
Positive	Not used	No signs of syphilis
Positive	Not used	Penile scar; syphilitic orchitis and aortitis
Positive	Negative	Syphilitic aortitis
Positive	Negative	No signs of syphilis
Positive	Negative	Syphilitic aortitis and valvulitis
Positive	Negative	No signs of syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	No signs of syphilis; miliary tuberculosis
Strongly positive	Not used	Syphilitic orchitis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	Not used	Syphilitic ostitis and periostitis
Strongly positive	Not used	No signs of syphilis
Strongly positive	++++	Syphilitic orchitis and aortitis
Strongly positive	Negative	Hepar lobatum; syphilitic orchitis
Strongly positive	Negative	Syphilitic aortitis; paresis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	Syphilitic leptomeningitis
Strongly positive	+++	Syphilitic aortitis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	Scars on shins; laryngeal cicatrices
Strongly positive	Negative	Syphilitic aortitis and valvulitis; penile scar; smooth atrophy of tongue.
Strongly positive	++++	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Syphilitic osteomyelitis tibiae
Strongly positive	+++	No signs of syphilis; cancer of uterus
Strongly positive	Negative	No signs of syphilis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	+++	Syphilitic aortitis
Strongly positive	Negative	Pretibial scars; syphilitic aortitis; general lymphadenopathy
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	Pretibial scars; syphilitic aortitis; general lymphadenopathy
Strongly positive	Negative	No signs of syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Tabes
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Congenital syphilis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	Not used	Syphilitic aortitis with aneurysm
Strongly positive	Not used	Chancre; adenopathy
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Gumma of heart; syphilitic aortitis
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Pigmented pretibial scars; syphilitic aortitis
Strongly positive	Not used	Syphilitic aortitis; hepar lobatum
Strongly positive	Not used	Syphilitic aortitis; aneurysm of aorta; gummas of liver; penile scar
Strongly positive	Not used	Hepar lobatum; indurative atrophy of tongue
Strongly positive	Negative	No signs of syphilis
Strongly positive	Not used	No signs of syphilis; ulcerative pulmonary tuberculosis
Strongly positive	++++	Congenital syphilis
Strongly positive	Negative	No signs of syphilis
Strongly positive	Not used	Syphilitic aortitis
Strongly positive	Not used	Syphilitic orchitis; indurative atrophy of tongue
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	No signs of syphilis; ulcerative tuberculosis of lungs
Strongly positive	Not used	No signs of syphilis
Strongly positive	Not used	Congenital syphilis
Strongly positive	Not used	No signs of syphilis; general miliary tuberculosis
Strongly positive	Negative	Mucous patches on palate
Strongly positive	Negative	Syphilitic aortitis and valvulitis; syphilitic cerebral endarteritis
Very strongly positive	Not used	No signs of syphilis
Very strongly positive	Not used	Syphilitic leptomeningitis, cerebral endarteritis
Very strongly positive	++++	Syphilitic aortitis
Very strongly positive	++++	Syphilitic aortitis, pharyngitis, laryngitis and glossitis
Very strongly positive	++++	Generalized cutaneous syphilids; mucous patches; adenopathy
Very strongly positive	++++	No signs of syphilis; epithelioma with extensive metastases
Very strongly positive	Negative	No signs of syphilis
Very strongly positive	++++	No signs of syphilis; carcinomatosis
Very strongly positive	Negative	Syphilitic aortitis
Very strongly positive	++++	Syphilitic leptomeningitis; syphilitic aortitis
Very strongly positive	++++	Congenital syphilis
Very strongly positive	++++	Syphilitic aortitis with aneurysm
Very strongly positive	+++	Congenital syphilis

known syphilitic tissues stained for spirochetes by the older method of Levaditi, including sclerotic lesions at the base of the tongue, syphilitic cirrhosis of the liver, chronic interstitial orchitis, syphilitic aortitis, gummas and sclerotic chancres. Even in active syphilitic lesions, efforts to demonstrate spirochetes by the same method are by no means uniformly fruitful. For example, in a case of syphilis recently investigated at necropsy in Bellevue Hospital, the skin was the seat of a generalized eruption, there were mucous patches in the mouth, and the scar of the chancre was still visible on the penis. The patient died of an acute exudative glomerulonephritis about seven weeks after syphilitic infection, and the body was submitted to necropsy a few hours after death, so that conditions appeared to be propitious for the demonstration of spirochetes in silver preparations. Sections of all the organs, including the skin lesions and the chancre, were stained and examined with care, but spiral microorganisms could not be identified. It appears, therefore, that the use of this method, while desirable in certain instances, is not always free from disappointing results, even in known syphilitic tissues. In the active chancre and in other virulent lesions of acquired syphilis, and in the organs of those dead of congenital syphilis, notably in the suprarenal capsule, swarms of spirochetes are often to be shown by the older method of Levaditi. In late syphilitic lesions, such as aortitis and orchitis, the demonstration of spirochetes is an exceedingly precarious undertaking, and pitfalls are frequent in the forms of minute tissue fibrils which become impregnated by silver and present an alluring resemblance to spirochetes, so that the microscopist who ventures to lay the foundations of a newer pathology of syphilis on the interpretation of spiral forms in sclerotic tissues sponsors a method whose hazards are at least fascinating.

The difficulty at Bellevue Hospital is furthermore increased by the fact that, in some instances, the written permission for necropsy is necessarily worded in such fashion as to preclude the examination of certain viscera, notably the organs of the head and neck, thus making it impracticable, in a small percentage of cases, to exclude lesions in localities in which it is known that syphilitic changes are of common occurrence. In by far the greater number of cases, however, we have been enabled to conduct complete necropsies, and in these, as in the restricted cases, we are always on the alert for signs of syphilis. Moreover, there are circumstances in which the pathologist, no matter what his training or experience may be, is apt to overlook the structural defects of syphilis. By taking all these things into consideration, and by excluding questionable necropsy reports, we feel that we have succeeded in arriving at certain conclusions which are accurate within the limitations imposed by biologic vagaries and by a human tendency to err. As far as the worth of the Wassermann reaction is concerned, we may be permitted the observation that we have no theories to defend, merely facts to present as we have found and interpreted them, and we shall hope not to leave it to be read between the lines that our technic has precipitated certain exceedingly regrettable mistakes.

Excluding the 204 instances in which one or both antigens gave a negative reaction and in which no signs of syphilis were found at necropsy, together with certain doubtful cases, Table 1 shows the cases on which this report is based. The results of an analysis of these cases may be expressed as in Table 2.

In order to arrive at an intelligent interpretation of the result of the Wassermann reaction, it is necessary to start with an anatomic conception of syphilis, and any definition of the disease which is not founded on an anatomic basis is obvious sophistry. Every known sign of syphilis, from the chancre through the gamut to the scar, is explicable as a purposeful reaction to injury. The Wassermann reaction, on the other hand, is a biologic phenomenon which occurs in certain syphilitic subjects and, in these circumstances, it is a symptom of value. It is not a specific reaction, however, but occurs in conditions other than syphilis, and it does not always occur in syphilis.

To the clinician, the interpretation of the results of the Wassermann reaction is of moment only so far as it permits him to arrive at a correct conclusion as to the absence or existence of the anatomic changes of syphilis in the body. We should not be guilty of such a glaring platitude were it not for the fact that the clinician who invokes a Wassermann reaction to aid

TABLE 2.—RESULTS OF ANALYSIS OF CASES IN TABLE 1

Positive Results with the Cholesterinized Antigen: 96 cases
- Positive in 20
  - Syphilis in 6 (30 per cent.)
  - No syphilis in 14 (70 per cent.)
- Strongly positive in 63
  - Syphilis in 30 (47.5 per cent.)
  - No syphilis in 33 (52.3 per cent.)
- Very strongly positive in 13
  - Syphilis in 9 (69 per cent.)
  - No syphilis in 4 (30 per cent.)

Positive Results with the Alcoholic Antigen: 15 cases
- Syphilis in 11 (73 per cent.)
- No syphilis in 4 (26 per cent.)

Results from the Use of Both Antigens in 49 Cases
- Cholesterin positive in 12; alcoholic negative in all; signs of syphilis positive in all.
- Cholesterin strongly positive in 12 (44 per cent.); alcoholic negative in 6, positive in 6; signs of syphilis positive in all.
- Cholesterin strongly positive in 15 (55 per cent.); alcoholic negative in 12, positive in 3; no syphilis in any.
- Cholesterin very strongly positive in 8; alcoholic positive in all; signs of syphilis positive in all; cholesterin very strongly positive in 2; alcoholic positive in both; no syphilis in either.

Negative Results in Positive Syphilis
- Cholesterinized antigen negative in 21 (31.3 per cent.) of 67 cases of syphilis.
  - Syphilis indolent, possibly healed, in 9 (42.5 per cent.)
  - Syphilis active in 12 (57 per cent.)
- Alcoholic antigen negative in 18 (56.2 per cent.) of 32 cases of syphilis.
  - Syphilis indolent, possibly healed, in 7 (38.8 per cent.)
  - Syphilis active in 11 (61 per cent.)

him in visualizing syphilitic changes in the deeper parts not uncommonly neglects to search for anatomic lesions in localities in which the senses are ready to yield definite information. We refer to those superficial and detectable changes in the skin and mucous membranes and elsewhere that lend themselves to purposes of diagnosis and that, unlike the Wassermann reaction, are specific, and reveal syphilis stripped of its uncertainties and artificialities. Previous to the introduction of the Wassermann reaction, the pathologist who had occasion to inquire of the attending physician or of the intern as to the clinical evidence of syphilis in the body under investigation almost invariably received a reply quoting the patient's denial or admission of infection. At the present moment the same question equally often elicits a statement referring to the substance of the Wassermann report. It is practically an unknown incident, in our experience, to receive any voluntary reference to the existence of a scar in the genital region that might be interpreted as a healed syphilitic lesion, to atrophic pigmented scars in the pretibial skin, to roughening of the anterior border of the tibia or thickening of its periosteum, to superficial lymphadenopathy, to

increased consistency and diminished sensitiveness of one or both testicles, to indurative atrophy of the base of the tongue, leukoplakia and the like, and scarring and deflection of the epiglottis, to scars of the pharyngeal vault, to perforation of the nasal septum, to the presumptively syphilitic nature of aortic regurgitation, to the ophthalmoscopic signs of chorioretinitis pigmentosa, and similar discoverable signs of syphilis, any one or any combination of which, as the case may be, is less apt to lead one astray than the results of a Wassermann reaction. These and like signs were sought by the clinicians of the generation that passed with Delafield and the elder Janeway; but the generation that holds the responsibility of the future is being inculcated with an almost reverential respect for artificial methods that neither clinician nor pathologist can explain or control.

CONCLUSIONS

1. Depending on the antigen employed, the Wassermann reaction in the living patient, as carried out at Bellevue Hospital, gives a negative result in from 31 to 56 per cent. of cases in which the characteristic anatomic signs of syphilis are demonstrable at necropsy.

2. The Wassermann reaction in the living patient is positive in at least 30 per cent. of cases in which it is not possible to demonstrate any of the anatomic lesions of syphilis at necropsy.

THE DIAGNOSIS OF INFARCTION OF THE ENTIRE SPLEEN

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Total infarction[1] or necrosis of the spleen has received little attention in medical literature. Even the larger systems of medicine devote only a line to its consideration. From scattered reports of colliquative necrosis, coagulation necrosis, thrombosis of the splenic vein, etc., it is evident that a definite symptomatology is associated with these specific affections of the spleen. The purpose of this paper, in addition to adding four instances of total infarction or necrosis of the spleen to the literature, is to point out the possibility of the diagnosis of this condition.

The symptoms are pain, tenderness in the left hypochondrium, enlargement of the spleen, occasionally fever, and vomiting of blood due to rupture of dilated gastric veins. A glance at the literature reveals the regularity with which these symptoms are recorded. The added examples in this report are a repetition of the former.

Whenever the spleen becomes totally infarcted, enlargement occurs, the weight varying from 300 to 1,300 gm., and the dimensions reaching such proportions as 25 by 15 by 8 cm. The enlargement in all of the new cases reported here was noted on physical examination, but was often misleading, it being assumed that such an enlargement must be due to a leukemia or other condition. This fallacy is demonstrated by the fact that infarction of the spleen may result in a huge enlargement, such as occurred in no less than ten instances in this report.

Pain in the left hypochondrium likewise is present, though variation in the site of the pain differs somewhat. In three cases the pain was described as diffuse throughout the abdomen, then localizing in the left hypochondrium, and in a fourth as "in the region of the stomach." The character of the pain varied from a dull ache to a sharp colic, with all degrees of gradation between. The pain is usually superficial and spontaneous, but may be deep and provokable. It is frequently exaggerated by changes in position, and may radiate along the phrenic nerve or into the left shoulder.[2] A sensation of weight in the left hypochondrium was often complained of, a violent hauling to the left exaggerated by inspiration, or a tingling, shooting or beating sensation in the same region.[3] The pain is probably due to irritation or interference with the structures immediately surrounding the spleen, since this organ is not very sensitive. Total infarction of the spleen may occur, however, without any pain, as in one case here reported and in three of those in the literature.

Tenderness is usually associated with the pain, and is present in the left hypochondrium. The tenderness may come on suddenly and may continue for many days, or there may be occasional tenderness in the left side.[4]

The presence of fever apparently depends on the disease to which the spleen alterations are concomitant. When this is due to an obstruction of the splenic vessels by thrombi or emboli that are sterile, fever is absent. But after the spleen has undergone degenerative changes, bacteria which were already present[5] or which make their entrance from some source such as the colon[6] multiply rapidly, the organ finally resembles a bag of pus, and fever occurs. In one of the four cases here reported, the *Proteus mirabilis*, in another the colon bacillus was isolated from the spleen, and in each instance a rise in temperature of from 1 to 2 degrees was present intermittently. Many times the splenic changes result from or are accompanied by inflammatory changes elsewhere in the body, and under such conditions the fever is often attributable to such factors. In one of our instances a gangrenous cystitis, in another a suppurative pylephlebitis and in a third an amebic dysentery was present and would account for the rise in temperature.

The vomiting of blood, bright red at times, and resembling coffee grounds at others, is of frequent occurrence. It was present in one of our instances and in several from the literature. Ewald[7] recorded an example of a large spleen resulting from a thrombosed splenic vein, the patient dying as the result of a hemorrhage from the stomach. Following the hemorrhage there was a marked reduction in the size of the spleen. The reasons for bleeding from the stomach following splenic infarction or necrosis are well known, and have been substantiated by experiments. The splenic changes are accompanied by extensive anastomoses between the splenic and gastro-epiploic vessels. The dilatation of these gastric veins often becomes extreme, and the possibility of their rupture

1. The term "total infarction" is here used because the condition is discussed in the literature, as a rule, under this title. Strictly, total infarction is very rare, most infarcts being "mixed," the blood by imperfectly anastomosing vessels infiltrating the edges to make a red margin about the place of more total infarction. "Infarction of the entire spleen" is, therefore, a better term.

2. Lefeuvre: Bull. Soc. anat. de Paris, 1848, p. 193.
3. Durand, M.: Contribution à l'étude des infarctus de la rate, Lille, 1903, Mason.
4. Saundby: Brit. Med. Jour., 1908, **2**, 1155.
5. Carriere and Vanverts: Arch. d. méd. exper. et d'anat. pathol., 1899, **11**, 48.
6. Balacescu: München. med. Wchnschr., 1901, **48**, 35.
7. Ewald: Deutsch. med. Wchnschr., 1913, **39**, 398.

is imminent. However, the bleeding in the instance recorded by Ewald was through a mucous membrane of the stomach which did not present gross lesions. This, too, has been described before. Experimentally, Troell[8] found that following ligation of the splenic veins, a second procedure is necessary, namely, ligation of the dilated anastomosing vessels in the ligamentum gastrosplenicum. Likewise, Warthin[9] found that after ligation of the splenic vessels proper, anastomoses of the spleen with veins of the gastrosplenic omentum and of the stomach allowed small islets of the spleen to live.

In the etiology of total infarction of the spleen, vascular obliteration has been held responsible; but the cause of the vascular obliteration must be determined. The important factors here concerned are pressure on the walls of the splenic vessels by tumors; torsion of these vessels in instances of ectopic spleen; thrombosis of the splenic vessels, and embolism. The emboli may be (1) exogenous, including microbes, and (2) endogenous, as atheromatous plaques. In one of our instances, thrombosis of both the splenic artery and the splenic vein was found; in another, an embolus in the splenic artery from a mitral endocarditis, and in a third an extension of a carcinoma into the splenic vein. Thrombosis of the splenic vein was the causative factor in nine instances recorded in the literature; arterial plugging was responsible in five. Occlusion of both the artery and the vein was present twice. Torsion of these vessels produced a total infarction in nine instances. Pressure on the vein or invasion of it by neoplasms was found twice. In five, the condition of the splenic vessels was not determined.

Thrombosis of the splenic vein has resulted, therefore, in a total splenic infarction more frequently than any other single factor. Usually the thrombus is primary in the splenic vein, Bonne[10] reporting the first example of this. His explanation is frequently quoted, and is as follows: An infectious process in the spleen results in a splenitis, which in turn produces an endophlebitis. This endophlebitis causes a proliferation of the endothelial cells, and leads to thrombus formation. The splenic induration and the circulatory disturbances which follow aid in an extension of the thrombus formation.

In a few examples of totally infarcted spleen, a portal thrombosis has been found associated with the splenic thrombosis, and it was difficult to determine whether the thrombosis was primary in the portal or splenic veins. Sometimes, in a general arterial sclerosis, the portal vein is markedly sclerosed. Or a portal sclerosis may be present even without a general arterial sclerosis.[11] In such instances, Simmons believes that the sclerosis is due to bacterial poisons, and the primary splenic enlargement is the result of blood stasis. Syphilis and trauma also have been held as productive of a primary portal sclerosis,[12] and may be responsible for a portal thrombosis which backs up into the splenic vein. The thrombus in the portal vein does not necessarily mean death to the patient, as is generally believed, since the thrombus may become canalized.[13] Or the portal vein may remain completely obliterated without causing death, as Umbra[14] found.

A displaced spleen or torsion of the splenic vessels may give rise to splenic infarction. In a series of twenty-six instances of ectopic spleen collected from the literature, Durso[15] found seven in which there had been complete infarction of the spleen. To these he added one instance of his own, the body of the organ being necrotic and surrounded by a narrow strip of healthy splenic tissue which obtained its nourishment from the capsule. He found that rotation of the spleen in dogs produced infarcts of the character of embolic infarcts, and that as a result, severe symptoms became manifest. He determined that the infarction resulted from the circulatory disturbance in the branches of the splenic veins.

An embolus lodging in the splenic artery only rarely gives rise to total infarction, in spite of the fact that this artery is an end artery. In one of our instances, however, total infarction resulted from an embolus coming from thrombi on the mitral valve.

The pathology of total infarction of the spleen does not differ from infarction in any viscus that has a "terminal" blood supply. Softening of the infarct is sometimes mistaken for abscess formation, and cannot be differentiated without the aid of the microscope. In each of our four instances, the changes in the spleen had reached this stage, the organ being entirely necrotic and resembling a bag filled with purulent material. In two of the four instances, bacteria of low virulence were isolated from this material. In approximately one half of the examples in the literature, a similar condition was found. In others the spleen was

TABLE 1.—EXAMPLES IN AUTHOR'S SERIES

Case	Cause	Symptoms	Pathology of Spleen	Cause of Death
1.....	Obturating thrombus of splenic artery and vein	Pain in left hypochondrium; vomiting at times; anorexia and headache for eight weeks; large spleen; intermittent fever, 1-2 degrees; both bright and "coffee ground" blood in vomitus	Spleen much enlarged and entirely necrotic	"Diphtheria and gangrenous cystitis"
2.....	Embolism of splenic artery from mitral endocarditis	All symptoms referable to an ulcerative, amebic colitis	Wt., 300 gm.; "a soft, yellow, necrotic mass not normal at any point."	"Ulcerative stenosis of rectum; amebic dysentery"
3.....	Extension of carcinoma into splenic vein	Enlargement of spleen; pain under costal arch	Wt., 600 gm.; size, 13 by 9 by 8 cm.; entirely necrotic	Carcinoma of stomach with perforation into lesser peritoneal cavity
4.....	Not determined; overlooked at necropsy	Pain in left hypochondrium	Wt., 210 gm.; organ entirely necrotic	"Suppurative pylephlebitis; multiple abscesses of liver"

8. Troell: Ligation of the Splenic Vessels as a Substitute for Splenectomy in Blood Diseases, Ann. Surg., 1915, **63**, 88.
9. Warthin: Experimental Ligation of the Splenic and Portal Veins with the Aim of Producing a Form of Splenic Anaemia, Proc. Soc. Exper. Biol. and Med., 1907, **4**, 127.
10. Bonne: Ein Beitrag zur Kenntniss der Thrombosen der vena lienelis, E. Huth, Göttingen, 1884.
11. Simmons: Virchows Arch. f. path. Anat., 1912, **207**, 360.
12. Heller: Verhandl. d. deutsch. path. Gesellsch., 1904, **41**, 182.
13. Edens: Ueber Milzvenenthrombose, Pfortaderthrombose und Bantische Krankheit, Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1908, **18**, 59.
14. Umbra: Beitrag zur Pfortaderobliteration, Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1901, **7**, 487.
15. Durso: Studio clinico e sperimentale dello infarto splenico nella rotazione della milza, Policlinico, Rome, 1896, **3** C, 63; abstr., Atti d. r. Accad. Med.-Chir. di Napoli, 1895, **49**, 214.

a "gigantesque" (gigantic) cicatrix, fibrous and infiltrated with blood pigment, the third or final phase of infarct formation having been reached.[3] In some, the three phases of infarct formation were represented, portions of the infarcted spleen being brownish and tumified, other regions having softened and become cysts filled with necrotic material, and still other portions of the same organ, fibrous and retracted.[16]

16. Lefeuvre: Etudes physiologiques et pathologiques sur les infarctus viscéraux, Paris, 1867, p. 125.

TABLE 2.—EXAMPLES FROM LITERATURE

Case	Author Reference	Cause	Symptoms	Pathology of Spleen	Cause of Death
1	Bonne, G.: Ein Beitrag zur Kenntnis der Thrombosen der vena lienalis, Göttingen.	Thrombosis of splenic vein and its branches; also of portal vein	Seized with abdominal pain; spleen became enlarged; diarrhea and headache developed	Spleen 18 by 11 by 15 cm.; necrotic	Peritonitis
2	Rolleston, H. D.: Tr. Path. Soc. London, 1891-1892, **43**, 49	Thrombosis of splenic vein	Not stated	Weight of spleen, 36 oz.; filled with extensive, anemic, infarcted areas	Chronic diarrhea
3	Same	Carcinoma growing into and occluding splenic vein	Not stated	Not stated	Peritoneal carcinomatosis, originating in cecum
4	Christomanos, A. A.: Beitr. z. path. Anat. u. z. allg. Path., 1898, **24**, 519	Torsion of pedicle and thrombosis of splenic vein	Diffuse abdominal pain localizing to left of epigastrium	Spleen weighed 1,300 gm.; entirely necrotic	Operation with recovery
5	Horch: Verhandl. d. deutsch. Gesellsch. f. Chir., 1885, **10**, 63	Torsion of pedicle with thrombosis of vein	Enlargement in left hypochondrium; pain on standing or walking; vomiting of blood	Weight, 2,700 gm.; vein filled with dark clot due to torsion of pedicle; cut surface gave appearance of infarct	Recovery following splenectomy
6	Heurtaux: Bull. et mém. Soc. d. chir., 1893, **19**, 752	Rotation of spleen with torsion of vessels	Tumor in abdomen, intermittent fever	Weight, 615 gm.; a rim of healthy tissue surrounded bulk of the organ, which was necrotic	Operation with recovery
7	Vetlesen, H. J.: Forh. med. Selsk. i Kristiania, 1889, p. 84	Infarction due to malignant endocarditis	Four attacks of pain in region of left costal margin, each associated with splenic enlargement	"Spleen large"; contained four distinct large infarctions corresponding to clinical history	Malignant endocarditis with hemorrhagic nephritis
8	Weber, F. P.: Med. Press and Circular, 1908, **87**, 14	Complete occlusion of splenic artery by recent thrombus	None	Weight, 12 oz.; organ converted into one large infarct	Pulmonary tuberculosis
9	Saundby: Brit. Med. Jour., 1908, **2**, 1155	Splenic thrombosis following pregnancy	Tenderness and occasional pain in left side with enlarged spleen	Not demonstrated	Did not die
10	Edens: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1908, **18**, 59	Old thrombosis of splenic and portal veins, the former canalized	Not stated	Spleen 25 by 15 by 8 cm.; firm consistency; marked increase in fibrous tissue throughout	Peritonitis
11	Same	Not known	Sudden pain in left hypochondrium; enlargement of spleen; fever for 3 weeks	Not known; diagnosis of splenic thrombosis or septic infarct	Recovered
12	Fisher, W. E.: Proc. Roy. Soc. Med., London, 1908-1909, **2**, Clin. Sec., 128	Wandering spleen	Not stated	Wandering spleen engorged, owing to traction on vessels and with large infarcts	Splenectomy; recovered
13	Watson and Stewart: Lancet, London, 1912, **2**, 877	Associated with tonsillitis	Tenderness in left side with enlarged spleen	Spleen converted into a sac filled with turbid bloody fluid; streptococci found	?
14	Goldman: Deutsch. med. Wchnschr., 1913, **39**, 1542	Endocarditis resulting in infarction of the spleen and thrombosis of the splenic vein	Pain in region of stomach; large spleen; vomiting of blood	Spleen 2 by 14 by 7 cm.; tough consistency; organ filled with old, fibroid infarcts	Portal thrombosis?
15	Ewald: Deutsch. med. Wchnschr., 1913, **39**, 398	Thrombosed, partially canalized splenic vein	Large spleen; fatal hemorrhage from stomach, followed by reduction in size of spleen	Spleen 30 by 7 by 6 cm.; same increase of fibrous tissue	Hemorrhage
16	Lavastine and Bloch: Bull. et mém. Soc. anat. de Paris, 1914, **79**, 352	Atheromatous splenic artery	Not stated	Weight, 500 gm.; spleen pulp entirely filled with infarcts of various ages; one, size of orange	Bronchopneumonia
17	Umber: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1901, **7**, 487	Complete obliteration of splenic and portal veins	Not stated	Marked enlargement; increase in fibrous tissue	?
18	Hektoen, L.: Med. News, 1894, **1**, 325	Extensive primary thrombosis of all of the splenic veins following typhoid	None referable to the spleen	Spleen 14 by 9 by 5 cm.; weight, 250 gm.; firm; filled with anemic and hemorrhagic infarcts, and all of the vein thrombotic.	Bronchopneumonia
19 to 26	Durso, G.: Policlinico, Rome, 1896, **3**-c, 1, 63	Reports one of his own and 7 cases collected from the literature of ectopic spleen associated with infarction and due to torsion of the splenic vessels	In most instances pain in the left side	Spleen enlarged, in one instance weighing 1,050 gm.	
27	Lefeuvre: Etudes physiologiques et pathologiques sur les infarctus viscéraux, Paris, 1867	Infarction resulting from aortic valve disease	Local manifestation hidden by an acute rheumatism and a subacute peritonitis; severe pain in splenic region, however	Spleen enlarged, adhering to surrounding structures, pulp filled with infarcts, four of which had softened and become comecysts filled gangrenous material	Pericarditis; peritonitis
28	Durand, M.: Contribution a l'étude des infarctus de la rate, Lille, 1903, Mason	Infarction resulting from an old typhoid fever	Tenderness on pressure in left hypochondrium	Spleen a "gigantesque" cicatrix, fibrous and infiltrated with blood pigment	Cerebral hemorrhage

Following thrombosis or embolism sufficient to cause complete occlusion of either the splenic artery or the splenic vein, the vessel itself undergoes degenerative changes and becomes obliterated from the point of its occlusion onward to its finer terminals.

From our examples it is evident that an occlusion of either the splenic artery or the splenic vein is sufficient to produce total infarction of the spleen. Simultaneous occlusion of both of these vessels, however, is apt to result in immediate necrosis of the entire spleen, and a fatal outcome may follow from the absorption of toxins. The first of our examples illustrates this. An obturating thrombosis of both the splenic artery and the splenic vein resulted in a much enlarged and entirely necrotic spleen. Death followed in six weeks from continuous absorption of toxic material.

Similar conclusions have been drawn from experiments. Carrière and Vanverts[17] ligated both vessels in dogs and rabbits, and found that in most instances gangrene resulted, the spleen becoming a pus sac. They held that the spleen normally contains bacteria, but that these are of low virulence or of none at all. Among these organisms are colon bacilli, diplococci, staphylococci and streptococci. In ligation of the splenic artery alone, gangrene did not result; and they concluded that since the circulation was not completely interfered with, the spleen cells were able to take care of the bacteria without pus formation. Balacescu[9] likewise found that when both the artery and the vein were tied, many animals died of absorption of toxins from a gangrenous spleen. When one vessel was tied, he found that many adhesions form and that gradually bacteria from the intestinal tract gain admittance into the spleen.

Any discussion of splenic thrombosis is incomplete without a consideration of the possibility of a relationship between this condition and the so-called Banti's disease. The exact status of Banti's disease has not been determined. Banti[18] assumes that a toxic agent produced in the spleen brings about the changes in the splenic and portal vessels, finally the three stages of a typical Banti's syndrome resulting. The first stage includes an enlargement of the spleen; the second, urinary changes and marked anemia; the third, liver changes with ascites and a gradual increase in the severity of all the symptoms. We now know that some mechanical conditions, such as circulatory disturbances in the splenic and portal systems, can produce an illness very similar to Banti's disease. Senator[19] is authority for the statement that splenic anemia cannot be differentiated from Banti's disease during the first stage of the latter. Gilbert and Lereboullet,[20] after a review of the subject, decide that Banti's disease does not exist. They maintain that the histology of Banti's disease is only that of a chronic passive hyperemia of the spleen, and that portal hypertension can make a good example of splenomegaly and can also cause the liver changes found in Banti's disease. As a result of these and similar conclusions, Isaac[21] wonders if Banti's disease is rather a complex of symptoms which may be caused by various etiologic factors.

The importance of recognizing infarction of the spleen of sufficient degree to produce symptoms is evident in considering the treatment. Whether medical attention is sufficient or whether surgical procedures are called for depends on several factors. Among these are the reaction of the patient to the toxic material absorbed from a necrotic spleen, and the presence of hemorrhage from dilated gastric veins. Usually in the total infarction of the spleen, the organ is bound to the surrounding structures by firm, fibrous adhesions. This increases the difficulty of surgical intervention. Perhaps improved methods from recent experiences with splenectomy in pernicious anemia will help to overcome these difficulties.

SUMMARY

1. Total infarction or necrosis of the spleen has been infrequently reported.

2. Total infarction of the spleen may result from an embolus or a thrombus in either the splenic artery or the splenic vein; from the extension of a thrombus backward from the portal vein into the splenic vein; from pressure on the splenic vessels by a neoplasm; from torsion of the splenic vessels when the spleen is displaced, or from an inflammatory process originating within the spleen and involving the terminal branches of the splenic artery and vein (Bonne's view).

3. Total infarction of the spleen gives rise to definite enlargement of the spleen, pain and tenderness in the left hypochondrium, fever, and occasional vomiting of blood, and from these a correct diagnosis may be made.

4. The treatment, whether medical or surgical, depends on many factors, such as the condition of the patient and the underlying disease of which the splenic infarction may be either the chief expression or only a minor part.

17. Carrière and Vanverts: Etudes sur les lesions produits par le ligature expérimentale des vaisseaux de la rate, Arch. de méd. exper. et d'anat. path., 1899, **11**, 498.

18. Banti: The Treatment of Banti's Disease, Folia haemat., 1910, **10**, 33.

19. Senator: Ueber Anaemia splenica mit Ascites (Bantische Krankheit), Berl. klin. Wchnschr., 1901, **38**, 1145.

20. Gilbert and Lereboullet, quoted by Cauchois: Splénomégalie chronique de'origine pylethrombosique, Thèse de Paris, 1908, p. 92.

21. Isaac: Das Bantische Symptom Komplex und seine Stellung unter den Splenomegalien, Jahrb. d. ges. Medizin (Schmidt's), 1912, **215**, 122.

EXCRETION OF INGESTED PURINS IN CHRONIC GOUT

A STUDY OF TWO CASES

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It is generally accepted that less exogenous uric acid is eliminated by persons subject to gout than by normal persons. It is still disputed whether or not this lessened excretion of exogenous uric acid can be used for diagnosis.

Vogt, Reach, Soetbeer, Pollak, Mallory, Weinberger and Yavein have found that in gout the excretion of exogenous purins is diminished and delayed. This is not always the case according to Magnus-Levy, Weintraud, Rommel and Pratt.

In a recent article, McClure and Pratt[1] present tables showing a summary of all the previous observations on the exogenous uric acid excretions of normal persons, of patients with chronic arthritis, and of gouty patients. They have studied the uric acid excretion in two cases of gout after the feeding of sweetbreads. They believe that the retention of uric acid is a symptom of questionable importance in the diagnosis of gout.

1. McClure, C. W., and Pratt, J. H.: A Study of Uric Acid in Gout, Arch. Int. Med., October, 1917, p. 481.

METHODS

In the present study, the patients received daily a purin-free diet composed of milk, cream, eggs, Horlick's Malted Milk, sugar, salt and water. The ingested purin was given as sweetbreads (thymus gland). The experimental methods were the same as those described in previous publications.[2]

The accompanying tables contain the data obtained in this study. It may be noted from Table 1 that following the addition of purins to the diet in the case of a nongouty person there is an increase in the excretion of uric acid. When the intake of the purins is doubled, there is again an increase in the amount of uric acid excreted.

Table 2 shows distinctly the limit of the patient in relation to ingested purins. On the first addition of purins to the diet, their excretion follows in a fairly normal manner. On a further increase of the purin intake, however, there is no further increased excretion of uric acid, showing that the first increase in the purin intake constitutes the individual's tolerance for purins.

The case outlined in Table 3 also shows the individual's tolerance for purins. On the first addition of purins to the diet, there is an increased excretion of uric acid. When the purin intake is trebled, there is, however, no further increase in the output of uric acid, showing that we have reached this individual's tolerance for purins on the first addition.

TABLE 1.—EFFECT OF INGESTED PURINS ON URINARY EXCRETION OF URIC ACID AND PURIN-NITROGEN IN A NORMAL PERSON

Day	Urine											Diet		
			Urea-Nitrogen		Ammonia-Nitrogen		Uric Acid			Purin-Nitrogen				
	Volume, C.c.	Total Nitrogen, Gm.	Gm.	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Gm.	Nitrogen	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Protein, Gm.	Nitrogen, Gm.	Purin-Nitrogen, Gm.
1	2,200	10.10	8.59	85.1	0.515	5.1	0.35	0.117	1.5	0.22	0.21	80	12.7	0
2	1,900	9.42	7.97	84.6	0.471	5.0	0.34	0.113	1.4	0.24	0.25	80	12.7	0
3	1,960	10.21	8.65	84.8	0.500	4.9	0.36	0.120	1.4	0.19	0.19	80	12.7	0
4	1,900	11.30	9.65	85.4	0.587	5.2	0.96	0.32	2.5	0.26	0.23	100	16.0	0.195
5	1,940	11.34	9.77	86.2	0.535	4.7	0.94	0.310	2.7	0.24	0.21	100	16.0	0.195
6	2,320	14.20	12.02	84.7	0.696	4.9	1.43	0.480	3.4	0.29	0.20	120	19.2	0.390

TABLE 2.—EFFECT OF INGESTED PURINS ON URINARY EXCRETION OF URIC ACID AND PURIN-NITROGEN IN A CASE OF CHRONIC GOUT

Day	Urine											Diet		
			Urea-Nitrogen		Ammonia-Nitrogen		Uric Acid			Purin-Nitrogen				
	Volume, C.c.	Total Nitrogen, Gm.	Gm.	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Gm.	Nitrogen	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Protein, Gm.	Nitrogen, Gm.	Purin-Nitrogen, Gm.
1	1,940	7.82	6.59	84.3	0.40	5.1	1.34	0.45	5.8	0.087	1.12	80	12.7	0
2	2,200	10.08	8.58	85.1	0.53	5.2	0.383	0.128	1.2	0.064	0.64	80	12.7	0
3	1,660	9.41	7.96	84.6	0.49	5.3	0.378	0.126	1.3	0.067	0.71	80	12.7	0
4	1,700	11.30	9.46	83.7	0.57	5.04	0.698	0.233	2.1	0.078	0.69	100	16.0	0.195
5	2,050	11.31	9.51	84.1	0.71	6.3	0.690	0.230	2.0	0.077	0.68	100	16.0	0.195
6	2,520	14.25	12.1	85.0	0.76	5.3	0.721	0.240	1.6	0.085	0.60	120	19.2	0.40

TABLE 3.—EFFECT OF INGESTED PURINS ON URINARY EXCRETION OF URIC ACID AND PURIN-NITROGEN IN A CASE OF CHRONIC GOUT

Day	Urine											Diet		
			Urea-Nitrogen		Ammonia-Nitrogen		Uric Acid			Purin-Nitrogen				
	Volume, C.c.	Total Nitrogen, Gm.	Gm.	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Gm.	Nitrogen	Total Nitrogen, Per Cent.	Gm.	Total Nitrogen, Per Cent.	Protein, Gm.	Nitrogen, Gm.	Purin-Nitrogen, Gm.
1	1,450	8.25	6.95	84.2	0.41	5.0	0.32	0.106	1.28	0.084	1.02	80	12.7	0
2	1,650	11.96	10.02	83.8	0.61	5.1	0.37	0.123	1.03	0.076	0.63	80	12.7	0
3	1,720	11.65	9.91	85.1	0.57	4.9	0.53	0.176	1.50	0.085	0.73	106	16.9	0.12
4	1,900	13.30	11.26	84.7	0.62	4.7	0.57	0.190	1.42	0.091	0.68	126	20.1	0.36
5	1,620	11.80	9.93	84.2	0.58	4.9	0.52	0.173	1.46	0.074	0.62	126	20.1	0.36

CONCLUSIONS

On the basis of the results obtained in this study of two cases of chronic gout, it seems that some gouty persons do not behave in the same way as the nongouty, as regards the excretion of ingested purins.

We have found, as have other observers, that there seems to be a point of tolerance in certain cases of gout, as regards the excreting of ingested purins.

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2. Einhorn, M., and Rosenbloom, Jacob: Nitrogen Metabolism in Three Cases of Duodenal Alimentation, Am. Jour. Med. Sc., 1911, **143**, 7. Stetten, D., and Rosenbloom, Jacob: Clinical and Metabolic Studies of Case of Hypopituitarism Due to Cyst of Hypophysis with Infantilism of Lorain Type, ibid., 1913, **146**, 731. Diller, T., and Rosenbloom, Jacob: Metabolism Studies in Case of Myasthenia Gravis, ibid., 1914, **148**, 65. Rosenbloom, Jacob: Calcium and Magnesium Metabolism in Case of Chronic Gout, ibid., 1916, **152**, 256. Stadtmüller, Norbert, and Rosenbloom, Jacob: Studies on Sulphur Metabolism, I, The Urinary Sulphur Partition in Various Diseases, Arch. Int. Med., September, 1913, p. 276. Rosenbloom, Jacob, and Cohoe, B. A.: Clinical and Metabolism Studies in a Case of Myotonia Congenita—Thomsen's Disease, ibid., August, 1914, p. 263. Rosenbloom, Jacob, and Price, H. T.: A Metabolism Study of a Case of Diabetes Insipidus, Am. Jour. Dis. Child., July, 1916, p. 53. Rosenbloom, Jacob: Metabolism Study of a Case of Froehlich's Syndrome (Dystrophia Adiposogenitalis), Interstate Med. Jour., 1917, **24**, 475.

Casualties.—In a modern battle from 5 to 25 per cent. of casualties may be expected. The proportion of killed to wounded is usually about one to four.—Col. T. H. Goodwin.

HEART BLOCK AND CONGENITAL HEART DISEASE IN CHILDHOOD *

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With the advent of the new methods of cardiac examination, many disturbances of rhythm, previously unsuspected, have been discovered in the heart during infancy and childhood. It has been shown, however, that, on the whole, the occurrence of cardiac irregularities, with the exception of sinus arrhythmia, is much more commonly found in adult life than in childhood. Of the various arrhythmias, one of the least commonly encountered in childhood is heart block.

Heart block may be defined as "an abnormal heart mechanism in which there is a delay in, or absence of, response of the ventricle to auricular impulses." [1] The cardiac impulse normally arises in the sinus node and passes thence to the auriculoventricular node, and then down the bundle of His and its two branches to the Purkinje fibers and the muscle cells. By means of the electrocardiograph, the time taken for the impulse to travel over this route can be measured, and is found to vary with the age of the individual. In the infant it averages 0.10 second; in early childhood this increases to 0.13, and at puberty it reaches 0.14.[2]

A delay in the conduction time may be graphically recorded and will appear in the phlebogram as an increase in the a-c interval. In the electrocardiogram the distance between the P wave, which corresponds to auricular systole, and the QRS group, which corresponds to ventricular systole, will be lengthened.

The case of heart block here reported is of unusual interest because, first, it has not followed any acute illness, which is by far the commonest cause of block in childhood, and, secondly, it occurs in a boy who is the subject of some congenital cardiac defect. The interesting question arises, therefore, as to whether the block is the result of the mechanical disturbance of the conduction fibers due to a congenital malformation.

REPORT OF CASE

Theodore G., aged 15 years, appeared at the Mount Sinai Hospital Dispensary, March 14, 1917, having been referred from school on account of "heart trouble." The family history was negative. At 3 years of age he had an attack of pneumonia, but was not very sick and made a perfect recovery. At 5 years he had measles, uncomplicated. Two years before entrance he was told by the school physician that he had heart trouble, but paid no further attention to the matter. Eighteen months before he had an attack of vomiting, followed by fainting, but this had never recurred. On arising in the morning, the boy had a severe frontal headache which lasted for from one to two hours and then disappeared. On exertion, such as climbing stairs, he became dyspneic and complained of severe palpitation. There were no other symptoms referable to the circulatory system. The boy had never been considered strong, and had progressed very slowly at school.

He was rather poorly nourished. His color was good. There was no cyanosis or clubbing of the extremities. His height was 57 inches (the average height at 15 years is 63 inches); his weight, 75 pounds (the average at 15 years is 110 pounds). His mentality was somewhat below normal. The teeth were good. The throat was negative—the tonsils were not enlarged or diseased. The cervical nodes were slightly enlarged. The pulses were equal, regular, of good quality, and slow (40 per minute). After exercise the pulse rate increased to 44. The apex beat was in the fifth space in the nipple line. There was no thrill. The right border by percussion was at the right sternal margin. The left border was one finger breadth outside the nipple line. The first sound at the apex was accompanied by a short blowing murmur transmitted outward for a short distance. Over the second left space there was a very loud, rough systolic murmur, transmitted for a short distance downward but not upward. There was a loud cervical venous hum. The remainder of the examination was completely negative. The urine and blood count were normal. The von Pirquet test and Wassermann reaction were negative. Roentgenoscopy revealed a distinct enlargement of the left side of the heart.

An electrocardiogram (Fig. 1) revealed the presence of a heart block. Lead I showed two types of beats, the normal complexes alternating with idioventricular beats. The normal beat was preceded by a P wave at a constant interval of about 0.2 second. The idioventricular beats had no constant relation to the preceding P wave. The idioventricular rate was 37. The beats whose origin was auricular came slightly in advance of this rate. Leads II and III showed the same phenomenon, except that the two types of beats did not alternate.

In order to rule out so-called functional block due to excessive vagus action, 1/60 grain of atropin sulphate was injected, and a second electrocardiogram was taken about thirty minutes later. This cardiogram (Fig. 2) showed that the block was unaffected. Lead I was taken during a period of complete block, Leads II and III showing occasional beats of auricular origin. The rate was unaffected.

The boy has now been under observation for eight months, and the cardiac condition has remained unchanged.

The diagnosis of a congenital heart affection is justified, we believe, on account of the presence of the loud murmur over the pulmonic region, and the mental and physical retardation of growth.

COMMENT

In adult life, chronic myocardial changes are the commonest cause of heart block; but in childhood almost all the reported cases of block are ascribed to acute inflammatory conditions. Thus diphtheria, acute rheumatism and less often pneumonia are the most important causes in children. More rarely, a simple slight febrile disturbance may be the precursor of a permanent heart block, as in the case reported by Frank and Polak[3] in a child aged 2½ years. Here the slow pulse appeared for the first time after a slight indisposition, attended by fever and accompanied by considerable dyspnea. Tracings showed that the auricle was beating at the rate of 107, while the ventricle beat at the rate of 42.8 per minute.

Postmortem examination in most of the cases following disease reveals inflammatory and degenerative changes in the node and bundle.[4] In some of the cases, however, the conduction system was found to be structurally apparently normal.[5] Such cases have been attributed by Roemer[6] to toxic functional disturbances. To this group of toxic heart block belong the conditions that arise in digitalis poisoning.

Apart, however, from cases due to acute myocardial degeneration and those due to toxic substances, a few cases of heart block have been reported in children in which both these factors were absent; but there

* From the Pediatric Dispensary of Mount Sinai Hospital.

1. Lewis: Clinical Disorders of the Heart Beat, London, 1912, p. 16.
2. Hecht: Ergebn. d. inn. Med. u. Kinderh., 1913, **11**.
3. Frank and Polak: Nederlandsch. Tijdschr. v. Geneesk., June 10, 1916.
4. Naish and Kennedy: Lancet, London, 1914, **2**, 1242. Butterfield, H. G.: Heart, 1911-1912, **3**, 203. Cowan, Flemming and Kennedy: Lancet, London, Feb. 3, 1912.
5. Hume, W., and Clegg, S.: Quart. Jour. Med., 1914, **8**, 1. Price, F. W., and Mackenzie, I.: Heart, 1911-1912, **3**, 233.
6. Roemer: Jahrb. f. Kinderh., 1912, **76**.

was present some form of congenital cardiac malformation.

The first of these cases was reported in 1910 by Fulton, Judson and Norris.[7] These authors describe a family in which a father, a daughter, aged 20 years, and an infant, aged 22 months, all showed bradycardia, which from pulse tracings appeared to be due to heart block. The infant's slow pulse rate, varying from 40 to 58, was noted at the age of 1 week, and continued unchanged as long as the case was under observation (twenty-four months). Signs of hypertrophy of the heart and a loud systolic murmur made the diagnosis of a congenital malformation very probable.

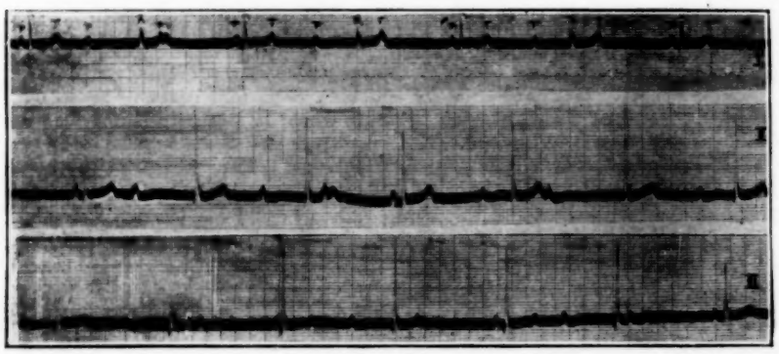

Fig. 1.—Heart block: In Lead I note the alteration of two types of ventricular complex.

In November, 1915, Whipham[8] described two very interesting cases. The first patient, an infant, aged 18 months, presented a constant bradycardia of 48 to 60; a loud systolic bruit over the whole precordium, loudest between the apex and the left sternal border; evidence of cardiac hypertrophy to the right; globular shaped heart in the roentgenogram; polycythemia, 8,400,000 red cells per cubic millimeter, and hemoglobin of 110 per cent. The electrocardiogram showed a regular 2:1 heart block.

Whipham's second patient was a girl, aged 12, in whom a slow pulse had been noted since her sixth year. Here also a loud systolic murmur with maximum intensity in the fourth interspace to the left of the sternum made the diagnosis of congenital cardiac malformation probable. Electrocardiographic tracings showed a complex form of block, complete at times, and at other times incomplete, either 3:2, 2:1 or of mixed type.

Zahorsky,[9] in 1915, reported a case of a child, aged 18 months, with a pulse rate of about 50, and signs pointing to a congenital heart malformation. He considered the case one of heart block, though he has published no cardiographic evidence to prove this.

We have here, then, four cases in which heart block was present in children who were the subjects of congenital heart disease. My own case makes the fifth. Considering that heart block in childhood occurs only very rarely, the fact that at least five cases have been reported in which this irregularity was present at the same time as cardiac malformation must be looked on as more than a mere coincidence. It is quite conceivable, moreover, that the malformation may involve part of the conduction system and thus give rise to disturbance of the heart's rhythm. The particular form of cardiac deformity most likely to involve the conduction fibers would be a defect in the interventricular septum, and it is in this group that the cases of Whipham apparently belong. The other reported cases, including my own, though undoubtedly subjects of congenital cardiac disease, do not, unfortunately, reveal symptoms definite enough to localize the lesion accurately.

One would believe, therefore, *a priori*, that septal defects might frequently involve the conduction system. Such, however, is not the case, as is shown in the following paragraph, quoted from Abbott:[10]

> The distribution of the auriculoventricular junctional bundle in septal defects is of much interest, and has been investigated by Keith, Mönkeberg, Morison and others. As is well known, this bundle emerges from the auriculoventricular node close to the interauricular septum behind the medial cusp of the tricuspid valve, and divides into two branches, the left of which pierces the interventricular septum just in front of the pars membranacea, and passes downward superficially beneath the endocardium of the septum to be distributed to the papillary muscles and the columnae carneae of this chamber; while the right branch runs, more deeply embedded in the musculature of the right side of the septum, to the apex of the right ventricle. In most of the cases of septal defect examined, there was surprisingly little change in this normal arrangement, the fibers streaming over the free border of the septum that formed the base of the defect toward the apices of their respective ventricles. . . . Recent investigations by Flack and Mall have shown that the interventricular septum is formed, not by a process growing up from below, as Rokitansky supposed, but by a hollowing out of the spongy musculature of the embryonic ventricle to form the right and left chambers; the tip of the inferior septum, therefore, represents the wall of the lumen of the original cardiac tube, and this may account for the persistence of the bundle at this point in septal defects.

Though the conduction fibers may not necessarily be involved in an anatomic defect, they may be secondarily affected by inflammatory changes due directly to disturbances of the blood current as suggested by Thalhimer.[11] Be this as it may, we can only conclude that block in childhood occurs in rare instances in hearts affected with congenital defects, and that until we obtain postmortem examinations in cases that have been carefully observed during life, we must remain ignorant of the exact relationship of the cardiac irregularity to the cardiac malformation.

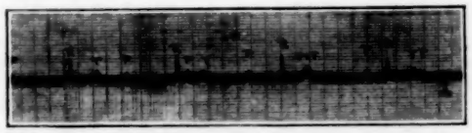

Fig. 2.—Lead I only, after administration of atropin sulphate; complete heart block.

41 West Eighty-Third Street.

7. Fulton, Judson and Norris: Am. Jour. Med. Sc., 1910, **140**, 339.
8. Whipham, T. R.: Brit. Jour. Dis. Child., 1915, **12**, 321.
9. Zahorsky: Interstate Med. Jour., 1915, **22**, 57.
10. Abbott, Maude: Congenital Cardiac Disease, in Osler's System, **4**, 367.
11. Thalhimer, quoted by Abbott (Footnote 10).

False Pretenses.—Professional services of a physician are held to be within a statute imposing a penalty on whoever obtains from another by false pretenses any money, personal property, or valuable thing, in the Mississippi case of *State* v. *Ball*, L. R. A. 1917 E, 1046.

SYPHILIS AS A CAUSE OF STILLBIRTHS

ANALYSIS OF FORTY-EIGHT STILLBIRTHS OCCURRING IN FIFTEEN HUNDRED OBSTETRIC CASES AT THE UNIVERSITY OF MICHIGAN MATERNITY HOSPITAL

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This study was originally undertaken at the suggestion of the American Association for the Study and Prevention of Infant Mortality, to obtain, if possible, further knowledge of some of the most important factors in the causation of stillbirths, and point the way to more efficient means of prevention.

The use of the term "stillbirth" has given rise to considerable confusion and misunderstanding, and as yet, there seems to be no universally accepted definition of the word. The definitions differ as to the stage of gestation at which birth takes place, and are variously set at four months, six months, seven months, viability, etc. They also differ as to what manifestations at birth are to be regarded as signs of life. Ballantyne[1] would limit the term "stillbirth" to the complete expulsion from the maternal birth canals of a child which, while exhibiting one or more of the signs of antenatal life for a time, namely, heart beat or movements, fails to assume those of postnatal life, namely, respiration and crying. According to the same writer, a "live birth" not only shows the characteristics of antenatal life at birth, but assumes those of postnatal life also, whereas a "dead birth" is one in which the characteristics of antenatal life have been lost during or before birth. The American Public Health Association states that "for registration purposes stillbirths should include all children born who do not live any time whatsoever, no matter how brief, after birth."

The fact remains that cessation of cardiac action is the infallible sign of death; hence, for the purposes of this paper, a stillbirth is considered as the birth of a child which has reached the stage of viability, at the twenty-seventh to twenty-eighth week, but in which cardiac action has ceased during or before birth.

The number of stillbirths in this series is 32 per thousand, which falls within the limits found for New York City,[2] where the number varies from 30.3 to 59.2 per thousand. Out of 1,867 stillbirths reported in Manhattan in a period of seven months, 1,331, or 71 per cent., occurred during the period from the seventh month on. Theoretically, these children would have had a chance to be born alive, had the mother received proper prenatal and natal care.

The great majority of the patients admitted to the maternity hospital are illegitimately pregnant, and hence come to the hospital at about the seventh month, as a rule, when it becomes difficult to conceal their condition any longer. On admission, each patient receives a thorough antepartum examination, including a routine Wassermann test; and if the history or the result of the blood test and physical examination indicates syphilis, more careful examinations are made and treatment instituted, if necessary. Other conditions complicating pregnancy are discovered at this time, proper treatment is given and precautions are taken.

In this series, however, it is unfortunate that the report on Wassermann reactions of the mothers is frequently lacking. This is partly accounted for by the fact that some of the patients entered in emergencies, requiring immediate attention, and some of the patients were cared for prior to the time when routine Wassermann tests were made. It is a well known fact that many cases of syphilis, especially in women, escape diagnosis, unless a routine Wassermann test is made, since the history and clinical findings are frequently entirely negative.

At the time of delivery, a routine Wassermann reaction is taken from the cut end of the cord before expulsion of the placenta, and the placenta is at once fixed in 10 per cent. dilution of liquor formaldehydi and sent to the laboratory for histologic examination. Should the child show any evidences of syphilis at birth or within the six weeks following, it is reexamined and another Wassermann reaction taken. Very few of the babies are kept at the hospital more than six weeks. Should the child be stillborn or die before leaving the hospital, a necropsy is performed.

This is the attempted routine in every case; and the fact that many of the data in this series of cases are incomplete should be an incentive to a physician to secure more careful and complete records in the future. It would be highly desirable for him to follow up the development of those infants, born apparently healthy, but with some suspicion of syphilis either in the mother or in the appearance of the placenta, and to obtain data as to the frequency of the transmission of syphilis in such cases.

On analyzing the etiologic factors set forth in the accompanying table, we see that in sixteen cases, or 33⅓ per cent. of the entire series, a diagnosis of syphilis was made on the basis of some one or several positive findings. In only two of these cases was there found any other factor that might have caused stillbirth. To offset these two cases, there were two additional cases in which there was a strong suspicion that syphilis was the etiologic factor.

The Wassermann test was made in seventeen cases. In the cases in which syphilis was diagnosed, a Wassermann reaction was obtained in eight cases, of which three were positive, and the rest negative. In the three Wassermann-positive cases, all the infants were macerated and at necropsy showed congenital syphilis. Spirochetes were demonstrated in two of the cases, and two of the placentas were syphilitic. Two of the Wassermann-negative cases looked suspicious, but not certainly syphilitic. Hence, of the syphilitic cases in which a Wassermann test was made, 50 per cent. were positive. The Wassermann reaction will occasionally be negative in latent cases, as may be seen in Case 790, in which the child was macerated, and showed a history of syphilis, as well as a positive Wassermann reaction and congenital syphilis at necropsy. But statistics covering larger series of cases show a positive Wassermann reaction in a much higher percentage of cases.

Histologic examination of the placenta is a frequently neglected aid in the diagnosis of syphilis, complicating pregnancy. For convenience, distinctions should be made among (1) normal placentas; (2) placentas showing fibrosis, sclerosis or obliterative changes in the vessels to a slight degree; (3) placentas

1. Ballantyne, J. W.: Stillbirths Registration, Jour. Obst. and Gynec. Brit. Emp., 1914, **25**, 132.
2. Thomas, L. W.: A Study of Stillbirths, New York Med. Jour., 1913, **98**, 413.

showing the same changes but more marked, with more cellularity and crowding of the villi, probably syphilitic, and (4) placentas showing definite interstitial chorionitis, certainly syphilitic. While it is true that certain etiologic factors, such as lead poisoning, nephritis and chronic intoxications, may produce pathologic changes in the placenta suggesting syphilis, nevertheless such complicating factors can usually be ruled out.

According to Slemons,[3] histologic examination of the placenta confirms or rules out syphilis with few exceptions. It agrees very closely with the Wassermann test, but more frequent exceptions are found in this clinic, although they are not so variable as to make histologic diagnoses unreliable. Some portions of the placenta may be slightly affected or not at all, and the picture may vary according to the part of the placenta that is examined.

Although syphilitic placentas are said to have a typical gross appearance, being characterized by increased size and a pale, dull, greasy look, I am convinced that if the child is born alive, the placenta will differ very little, if any, from the normal. On the other hand, if the child is stillborn and macerated, the placenta shares in the decomposition and may appear dull and greasy. This appearance is likewise produced from cardiac insufficiency or any other cause producing intra-uterine death and maceration.

In thirteen out of the sixteen syphilitic cases, the placenta was examined. It was diagnosed as positively syphilitic in ten cases, or 77 per cent., with suspicions of syphilis in two cases, or 15 per cent., and negative in one case, or 8 per cent. A necropsy on the baby, done in eight of the ten positive cases, showed congenital syphilis in six cases, or 75 per cent. In the other two cases the fetal tissues were too decomposed for diagnosis. It is interesting to observe that in the single syphilitic case in which the placenta was diagnosed as normal, necropsy revealed congenital syphilis, with the presence of spirochetes. Three necropsies were performed on four babies, in whom the placentas were suspected of syphilis. One of these showed congenital syphilis, one was negative, and the third showed nothing on account of extensive maceration.

The records of the maternity hospital contain many cases[4] in which the mothers and babies, both clinically and serologically, are entirely normal, but the placentas have been diagnosed in the pathologic laboratory as positively syphilitic or suspected of syphilis. The question as to whether these cases are truly syphilitic could best be determined by making repeated Wassermann tests and by following up both mother and child and observing the development of any positive manifestations.

Out of the forty-eight cases of stillbirth, twenty-one infants were born in a macerated condition. In sixteen of these twenty-one cases, a necropsy was performed and showed congenital syphilis in nine cases, or 56.25 per cent. Of the other seven negative cases, two were so badly decomposed that no diagnosis could be made, but it is strongly probable that one or both were syphilitic. It has long been recognized that from 60 to 80 per cent. of stillborn macerated babies are syphilitic. In only two of these cases were attempts made to demonstrate spirochetes in the fetal tissues, and in both cases the organisms were found. It is well worth while, in the case of stillborn macerated infants, to remove a piece of the liver, fix it in 10 per cent. dilution of liquor formaldehydi, and examine it for spirochetes by the Levaditi method. To demonstrate the spirochete of syphilis is to prove beyond all doubt the syphilitic nature of the case, no matter what the other tests may be. The chance of success is much greater in examining a fetal liver than in attempting to demonstrate the spirochetes in syphilitic placentas, for they are rarely, if ever, found here.[5]

Analysis of the cases of stillbirth caused by factors other than syphilis shows four cases due to forcible delivery undertaken for eclampsia; four cases due to premature separation of the placenta; three cases due to tight coils of cord about the neck; two cases of prolapse of the cord; two cases of placenta praevia; two cases of maternal heart disease; two cases of version and extraction; two cases of breech extraction; two cases in which the child was a monster, and one case each of nephritis, true knot in the cord, prolonged chloroform narcosis, and forceps in face presentation. There were three cases in which the cause remained undetermined.

The problem of greatest interest and importance in connection with these statistics is that of prevention. I have discussed the factor of syphilis in some detail because of the fact that this disease alone accounts for fully one third of the cases of stillbirth and is by far the largest single factor. In a study of 705 fetal deaths occurring between the seventh month of gestation and the end of the second week after birth, Williams[6] found that syphilis was responsible in 26.4 per cent. of the cases. Hence, the good effects of all measures tending to reduce the frequency of syphilis, which has been estimated at at least 10 per cent. of the population, will be seen at once in a reduction of stillbirths. Syphilis complicating pregnancy will be diagnosed more frequently if the Wassermann test is made more universally available. Many patients are unwilling to assume the added expense of having the test made. In Michigan this obstacle has been removed by the action of the state board of health in performing the test without expense to the patient or the physician. More recently in the same state, syphilis and gonorrhea have been declared reportable diseases, and stringent measures have been provided for isolation and treatment. Although this is more or less a wartime measure, it is to be hoped that it will continue in force after the war.

Even if the pregnant patient is found to have the disease, much benefit can come from energetic treatment during the course of the pregnancy, especially if it is discovered soon after conception. In a series of 127 cases, Marcus[7] found that 90.2 per cent. of the children of untreated mothers were syphilitic; 82.3 per cent. of the children of mothers receiving treatment prior to pregnancy were syphilitic; but if the mothers were treated during pregnancy, only 45.6 per cent. of the children were syphilitic.

The best results for mother and child are obtained by the use of both mercury and salvarsan, the combination being more effective in obtaining healthy

3. Slemons, J. M.: The Results of a Routine Study of the Placenta, Am. Jour. Obst., 1916, **74**, 204.
4. Bartholomew, R. A.: Syphilis as a Complication of Pregnancy, Jour. Michigan Med. Soc., 1915, **14**, 325.
5. Bartholomew, R. A.: The Difficulty of Demonstrating Spirochetes in Syphilitic Placentae, Jour. Michigan Med. Soc., 1917, **16**, 279.
6. Williams, J. W.: The Limitations and Possibilities of Prenatal Care, The Journal A. M. A., Jan. 9, 1915, pp. 97-101.
7. Marcus, K.: Klinische Beobachtungen über die Prognose der kongenitalen Syphilis, Arch. f. Dermat. u. Syph., 1913, **106**, 97.

infants than either one alone. Hedén[8] found that when salvarsan alone was used, half the babies showed syphilis or a positive Wassermann reaction at birth, whereas with the use of salvarsan and mercury, none of the babies showed clinical symptoms or a positive Wassermann reaction at birth.

As to the stillbirths due to the various other obstetric complications, better results depend in part on more and with the provision of safer surroundings for the patient during confinement. There will, however, always be a considerable number of stillbirths due to these causes, in spite of good surroundings and the most skilled care.

CONCLUSION

1. There is need for the adoption of a uniform definition of stillbirth and of compulsory reporting of stillbirths, in order that statistics on this important cause of infant mortality may be improved.

2. Syphilis is the causative factor in at least one third of the stillbirths from the time of viability to full term, and a Wassermann reaction is strongly indicated in cases in which there have been suggestive clinical symptoms, unexplained abortions, or premature labors with macerated babies.

CAUSATIVE FACTORS IN FORTY-EIGHT CASES OF STILLBIRTH

Case No.	Syphilis						Other Causes
	Mother		Child			Placenta	
	Wassermann	Clinical History or Findings	Wassermann	Necropsy	Macerated		
11	.....	+	.....	.....	+	.....	—
27	.....	—	.....	.....	+	.....	Eclampsia; manual dilation; version; extraction
97	.....	—	.....	.....	—	.....	—
143	.....	—	.....	.....	—	.....	Monster; craniorachischisis
197	.....	+	.....	.....	+	Suspicious	—
260	.....	+	.....	.....	+	+	—
270	.....	+	.....	+	+	+	—
291	.....	—	.....	.....	—	.....	Eclampsia; manual dilation; forceps
294	.....	—	.....	.....	—	.....	Breech extraction
386	.....	+	.....	+	+	Suspicious	—
435	.....	—	.....	—	—	—	Prolonged chloroform; cord around neck
450	.....	—	.....	.....	—	—	Contracted pelvis; face presentation; forceps
470	.....	+	.....	+	+	.....	—
495	.....	—	.....	.....	—	.....	Breech extraction
544	.....	—	.....	.....	—	.....	—
571	.....	—	.....	—	+	.....	Mitral regurgitation; pleurisy with effusion
600	.....	—	.....	.....	—	—	Inefficient pains; version and extraction
609	.....	—	.....	.....	—	—	Premature rupture of membranes; prolapsed cord
619	.....	—	.....	+	+	+	—
634	.....	—	.....	—	—	.....	Eclampsia; manual dilation; high forceps
675	.....	+	.....	+	+	+	—
698	—	—	.....	.....	—	.....	True knot in cord
750	.....	—	.....	.....	+	—	Myocardial degeneration; P. I. P., antepartum infection
771	.....	—	.....	.....	—	—	Premature separation of placenta; hemorrhage
790	—	+	+	+	+	.....	—
827	—	—	.....	+	—	+	Nephritis
944	—	—	.....	.....	—	—	Inefficient pains; no result from pituitary solution; version extr.
979	.....	—	.....	.....	—	—	Pulmonary stenosis; exophthalmic goiter; prem. sep. plac.
1002	—	—	.....	—	—	—	Nephritis; pituitary solution
1012	.....	—	.....	.....	—	—	Placenta praevia; hemorrhage; forceps
1049	—	—	—	—	+	.....	—
1056	.....	—	.....	—	—	—	"Twilight sleep" used; coils of cord around neck; asphyxia
1172	—	—	.....	—	—	—	Hydramnios; twisted cord around neck; asphyxia
1196	.....	+	+++	.....	—	+	Transverse pres.; prem. sep. plac.; hemorrhage
1229	++++	+	.....	+ Spirochetes found	+	+	—
1258	—	—	.....	—	+	+	—
1270	—	—	—	—	+	—	Premature separation of the placenta
1285	—	—	.....	.....	—	—	Eclampsia; version and extraction
1303	—	—	.....	—	—	—	Hydrocephalus; spina bifida; craniotomy
1324	.....	+	.....	—	+	+	Erysipelas
1335	++++	+	.....	+	+	+	—
1362	.....	—	.....	—	—	.....	Central placenta praevia; pack; manual dilation; version and extraction
1436	.....	—	—	.....	—	—	Pre-eclampsia; edema of lungs; induction of labor with bag; prolapse of cord; version; extraction
1467	++++	+	.....	+ Spirochetes found	+	—	—
1581	—	—	.....	.....	—	—	Nephritic toxemia; prem. sep. of plac.
1589	—	—	—	—	+	Suspicious	Prem. sep. of plac.; intrapartum infection
1592	—	—	.....	—	+	Suspicious	—
1597	.....	—	—	—	—	—	Four coils of cord around neck

attention to prenatal care. If detected early, the toxemias of pregnancy are more amenable to treatment than if allowed to progress beyond control. In obstetric emergencies, improvement in results will come with more efficient obstetric training of the physician

8. Hedén, K.: Klinische Beobachtungen über die Einwirkung des Salvarsans und der Kombination von Salvarsan und Quecksilber auf den Fötus, Dermat. Wchnschr., 1914, 58, 361.

3. A combination of mercury and salvarsan is more effective in assuring the birth of a healthy infant than salvarsan alone.

4. Important confirmative evidence in the diagnosis of syphilis can be obtained from microscopic examination of the placenta, or in case of stillbirth, from examination of the fetal liver by the Levaditi method.

5. More efficient and practical training in obstetrics, and safer surroundings for the patient during confinement will prevent some of the stillbirths resulting from other complications of pregnancy and obstetric emergencies. But there will always remain a considerable number of stillbirths from unavoidable causes.

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COMMITMENT TO PSYCHOPATHIC HOSPITAL AS RELATED TO QUESTION OF PERSONAL LIBERTY

ADVANTAGES OF A PROPOSED LAW FOR DETENTION INSTEAD OF THE PRESENT LAW FOR COMMITMENT *

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Mental competence is abolished in insanity, and also in patients not strictly insane, as hysterical subjects, and victims of drink or drugs, of toxic delirium, and of cerebral hemorrhage, tumor or trauma. Patients in each of these conditions are unable to act responsibly and, if placed under treatment or control, must be made the subject of a judicial record of insanity; otherwise admission to institutions is forbidden.

Patients and their friends in great numbers constantly refuse thus to fix what they call the "stigma" of insanity on the patient. They will submit to untold distress before placing a "ban," as they think, on a loved one or on a family, by a public hearing or a court inquest followed by a public record of insanity. Proper care and treatment are thus denied or delayed for weeks, months and years, and incalculable harm results. In the populous communities in every state of the Union, each year, scores, even hundreds, of those suffering from mental disorders reach the incurable stage before treatment is secured. The reports of institutions, which generally show a duration of insanity of a year or more in a majority of all admitted, clearly prove that these cases are often chronic and practically incurable before these patients reach the insane hospital; and it is often too late to hope for recovery when the legal steps are finally taken. In any event, the suffering and injury entailed on all concerned further intensify this evil, which all our communities endure without seeming to be conscious of its extent. Of course, certain cases are incurable at the start; but these may be regarded as a minority. Naturally, the main reason of all this difficulty and misfortune is the proper jealousy of the law regarding personal liberty; and my object in presenting this matter is to inquire whether any method can be adopted whereby personal liberty can be equally well conserved and a source of injustice to the unfortunate at the same time removed.

It is certain that no stigma ought to attach to mental illness any more than to physical illness; yet this is one of the numerous things that *is* although it ought not to be. Probably only advancing education and enlightenment will remove the idea of a supposed stigma attaching to mental disease. I may here mention some of the facts that conspire to produce this unfortunate result.

To the eye of the law, so far as legal proceedings are concerned, insanity and criminality seem to look much alike. In both cases, the individual is under arrest or detention; is in the attitude of an accused person, and in one case is found guilty, and in the other, pronounced *non compos mentis*. Then sentence is passed by judge or jury, and the person held in custody is sent "over the road" to an institution of the state —the asylum or the prison, as the case may be. Each of these two roads, to the undiscriminating public eye, seems to lead to an equally undesirable destination. Another situation exists tending to perplexity on the part of the uninformed. Crime is at times a result of insanity; insanity is also used as a plea in extenuation of crime, and cause and effect are thus confused in the minds of the masses. Finally, the old but still surviving superstition that regards insanity as a "demoniacal possession" adds in some instances to the sense of shame. There is no more reason to associate disgrace with insanity than with rheumatism or Bright's disease. Indeed, when it comes to a question of blame or discredit, the latter are in reality just as often the sequel of evil habits or immoral conduct as is insanity.

In some of our more progressive states, it has been sought to meet the difficulties here described by "voluntary" and "temporary" commitment laws or "emergency" commitments. These have undoubtedly been of great benefit. Their benefit, however, is exceptional and partial. Only in a few instances have these measures been adopted, while the ancient and outgrown methods still generally prevail. It would be well if the patient could go to the psychopathic hospital precisely as to any other; but the possibility of wrongful detention in such hospital, and the necessity of safeguarding personal liberty, have resulted in these legal restrictions which deny admission to all, even though needing such benefit except on condition of a public declaration or verdict of insanity. The same condition also applies to all who enter the state hospitals for the insane.

The law at present accompanies the patient to the door of the hospital and leaves him there subject to all subsequent chances. I believe that a majority of the patients do not need attention from the law before commitment, while there are numerous cases that the law should follow and be cognizant of after as well as before admission to the institution.

I wish here to inquire whether the law cannot follow and surround the patient within the walls of the detention or psychopathic hospital by putting in operation through independent action of the court itself, at regular, short, stated intervals, a method of inquiry personally addressed to each patient which shall give him the opportunity of saying whether he remains in the hospital of his own free will or wishes his liberty. It is believed that if such a method should be adopted, all cases really requiring legal assistance would naturally come to light, and that in the case of a majority, it would be found there was no occasion for court action to be taken.

* Read before the American Neurological Association, Boston, May 21, 1917.

It is now universally recognized that every city of any considerable size requires an institution for the care and detention of the large number of persons temporarily or permanently incapacitated from a mental standpoint—in other words, the psychopathic hospital is more and more seen as a necessity. Such hospitals are already in beneficial operation, but their usefulness could be largely increased by making them more free of access. Patients should be admitted in the same manner as those admitted to other hospitals and freely discharged as well, except in the case of patients who are in a condition making it unsafe or injurious to themselves or others to be at large.

A considerable number even of those who, strictly speaking, are insane, would offer no objection to their stay in the hospital; while the great majority of those suffering from hysteria or severe neurasthenia, victims of drink or drugs, or patients with toxic delirium or cerebral hemorrhage, tumor or trauma could go to the psychopathic hospital, which is by far the most appropriate place for their treatment, precisely as to any other hospital. If any of either class needed detention against their will, then and then only would occasion arise for invoking the authority of the law, and for detention by order of court. All others might be free to go and come according to their own will. No so-called ban or stigma or verdict of insanity would unnecessarily be placed on any, and the court, with the aid of medical advice, would be able to discriminate between such cases and those of psychoses actually requiring the intervention of judge or jury. Furthermore, the so-called ban or stigma of insanity would be largely removed by the very policy here proposed.

In this connection, it is pertinent to speak of the meaning of the word "insanity." This word has never been defined satisfactorily from either the legal or the medical standpoint. It is as indefinite when applied to the mind as is the word "sick" when applied to the body. Just as there are all possible degrees of sickness, so there are infinite gradations of so-called insanity. Some bodily sickness is so severe that it confines a patient to bed; in other cases, the patient is up and about; patients may be seriously and incurably sick and yet walk the streets and transact business. In the same way the term "insanity" is applied to innumerable conditions. In some cases, it means total loss of mind. In others, a great degree of mental clearness remains. Some patients need close confinement; others can have entire freedom; still others, though decidedly insane, are bright and capable in certain directions; some patients are only temporarily or periodically affected. Insanity is a word without any uniform significance. It would be well if it could be omitted from scientific writings. The term "psychosis" is applicable to all forms of mental disorder or derangement, and carries with it no offense.

The psychopathic or detention hospital as now constituted is in all cases under jurisdiction of the county or city court, which determines the status of the inmates from time to time and warrants their commitment, if necessary, to the state institutions. In some instances, the court sits and keeps its record in the hospital building, provision being made for this in its construction. Such is the arrangement now existing at the psychopathic hospital in Chicago for Cook County, and it is believed that if such arrangements were made at the psychopathic hospitals of New York, Boston and other large cities, the public, especially the "psychopathic" public, would be the gainer. Such provision could readily be made in all cases, and the machinery of the court could be so arranged that at regular and stated intervals each inmate of the psychopathic hospital could be interrogated by the clerk or other independent agent of the court as to his or her desire to remain under treatment or to leave the hospital. All who wished to leave, whose condition required legal control, could readily be dealt with in the same manner as is now customary; the difference would be that under this provision a very much smaller number of cases would require commitment or other interference from the law or court.

TREATMENT OF NONTUBERCULOUS LUNG ABSCESS WITH PNEUMOTHORAX

REPORT OF TEN CASES *

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In a paper published last year, I reported[1] two cases of acute pulmonary abscess treated with artificial pneumothorax, stating that so far as I knew, this was an original method of treatment for acute abscesses. The acute abscess is not a rare condition, since, after the publication of my report, I received a large number of letters from physicians who had abscess cases under treatment. In Washington alone during the past year I have seen fifteen cases following operations on the nose or throat.

In this report, I discuss only the lung abscess that follows an operation on the nose or throat. It may be well to state briefly the etiology, symptoms, etc., common to these cases.

The infection is of the usual mixed type, with the staphylococcus and streptococcus predominating. There are two theories as to the mode of infection: 1. The infecting organisms are carried into the lung by the direct aspiration of infected blood, due to a partial paralysis of the epiglottis while the patient is under the anesthetic. 2. The infecting organisms are carried into the lung from the field of operation by means of an infected clot, with a resulting septic infarct. The symptoms appear from four to ten days after operation, and begin with a rise in temperature, dry cough, pain in the chest on the affected side, and profuse sweating. Blood examination shows a leukocytosis, and physical examination reveals dulness with diminished breathing over the abscessed area. From one to two weeks after onset of the symptoms, the abscess ruptures, and a large amount of foul pus is coughed up. The prognosis under medical treatment is poor. In rare instances, when the abscess is small, healing takes place spontaneously. I have seen this occur in one instance. Forchheimer[2] quotes Kissling's report of 133 cases of lung abscess and lung gangrene treated medically, with less than 10 per cent. resulting in recovery, and 64 per cent. in death. I myself have seen seven cases treated medically without pneumothorax. Of these, four patients died, two are improved, and one made an apparent recovery.

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* Read before the George Washington Medical Society, Dec. 15, 1917.

1. Tewksbury, W. D.: Acute Pulmonary Abscess Treated with Artificial Pneumothorax, THE JOURNAL A. M. A., March 10, 1917, p. 770.
2. Forchheimer, Frederick: Therapeusis of Internal Diseases, New York, Daniel Appleton & Co., 1913, 3, 441.

The first eight cases reported in this series were acute, being of less than six weeks' duration.

REPORT OF CASES

CASE 1.—Mr. H. G. P., aged 32, seen in consultation with Drs. Reginald Walker, Charles White and Sterling Ruffin, was operated on, June 17, 1916. He developed an abscess of the right lung, June 26, and was becoming progressively worse until August 12, about six weeks after onset of the symptoms, when pneumothorax treatment was started. The lung was gradually compressed by a small and frequent injection of air into the pleural sac, and later, large and less frequent injections were used. Ten treatments were given from August 12 to October 15, on which date the patient was discharged as cured. Roentgenograms taken several months after the discharge showed the lung as normal, with practically no evidence of the abscess scar. The patient is in perfect health now, fourteen months after treatment.

CASE 2.—Mrs. O. B., aged 27, seen in consultation with Dr. Charles W. Richardson, was operated on, Sept. 9, 1916. September 16, an abscess of the left lung developed. The patient was extremely septic, becoming rapidly worse. October 15, four weeks after the development of an abscess, pneumothorax was started and six treatments were given, the date of the last being November 20, when the patient was discharged as cured. She remains well thirteen months after treatment.

CASE 3.—Mr. A. C. N., seen in consultation with Drs. D. E. Mulcahy and Reginald Walker, was subjected to a double frontal sinus operation, about Nov. 1, 1916, and developed an abscess of the right lung, November 7. Pneumothorax was started, November 24, and eight treatments were given, the date of the last being January 21. The patient had a rather slow convalescence, but the lung was healed by March 1, and he remains well, eleven months after treatment.

CASE 4.—Anna J., aged 13, seen in consultation with Dr. Claytor, was operated on, about October 15, developing abscess of the left lung one week later. The patient became progressively worse, and pneumothorax was started, November 27. Five treatments were given, the last one, December 30, when the patient was discharged as cured. So far as I am able to learn, she remains well eleven months after treatment.

CASE 5.—Mrs. L. H., aged 24, seen in consultation with Dr. Charles White, was operated on, about Jan. 15, 1917, and developed an abscess of the right lung one week later. I was called in, February 22, one month after the development of the abscess. The patient gave a history of having suffered with asthma and epileptic attacks for a number of years. Examination revealed a probable five months' pregnancy, although there was no fetal motion or fetal heart sounds. The patient was desperately sick. Two treatments were given, producing a partial compression of the lung. The patient coughed up a large amount of pus and seemed somewhat better for twenty-four hours. She went into labor, however, March 1, and delivered a five months' fetus, which had apparently been dead several weeks. No more injections of gas were attempted. She died, March 4, two days after the delivery of the fetus. In this patient, the history of asthma and epilepsy showed a poor general condition, and the additional complication of the pregnancy with miscarriage made the case hopeless.

CASE 6.—Miss K. S., aged 24, seen in consultation with Drs. C. W. Richardson and G. N. Acker, was operated on, March 15, 1917. An abscess in the right lung developed, March 20. The patient was very septic, becoming progressively worse. Pneumothorax was started, March 29, nine days after onset of the abscess. Seven treatments were given, the date of the last being May 7, when the patient was discharged as cured. She remains perfectly well at the present time, more than seven months after discharge.

CASE 7.—Miss K. K., aged 20, seen in consultation with Drs. C. B. Conklin and Charles White, was operated on, May 9, 1917, and developed an abscess of the right lung one week later. Pneumothorax was started, June 4, nineteen days after the development of the abscess. It was noticed at the first treatment that there was a little fluid in the pleural sac. Three injections of gas were given at intervals during the period from June 4 to June 10. The lower portion of the lung collapsed, but there were adhesions over the upper half of the lung, which prevented collapse. The patient developed considerable pain, and the signs of pleural effusion increased rapidly. We suspected a rupture of the abscess into the pleural sac, and aspiration confirmed our suspicion. We found the pleural sac to contain a thin, slightly turbid fluid, of an extremely foul odor. The patient was immediately taken to the hospital, where Dr. Charles White did a partial rib resection and put in a drainage tube. The infection was extremely virulent, showing chiefly streptococci. The patient showed no improvement after the operation, and died, June 23. This case was a great disappointment, for while the patient was desperately ill before pneumothorax was begun, still her symptoms seemed no worse than those of several patients who were cured. The presence of pleural adhesions was probably the cause of the rupture of the abscess into the pleural sac. This fact impresses on us the importance of collapsing these cases promptly. The longer we wait, the more probable it is that we shall find pleural adhesions.

CASE 8.—Hazel H., aged 13, seen in consultation with Dr. J. D. Rogers, was operated on early in June, and developed an abscess in the right lung about June 15. The patient appeared very septic, and pneumothorax was started, June 28; two weeks after the development of the abscess. Five treatments were given during the period between June 28 and July 25, when the patient was discharged as cured. She remains well five months after the discharge.

The following are two cases of chronic lung abscess:

CASE 9.—Mr. A. B., aged 25, was seen in consultation with Dr. Herbert Martin, Nov. 24, 1916. His tonsils had been removed one year before, an operation which had been followed by an acute abscess of the right lung. The abscess had apparently been healing gradually, and the patient thought himself nearly well. Early in November, 1916, however, he suddenly began to have a severe pulmonary hemorrhage. Dr. Martin had tried all the usual methods of treatment, but the patient continued to have a severe hemorrhage about every twenty-four hours. Examination revealed signs of an abscess involving the middle and the lower portions of the right lung. Pneumothorax was started, November 24, and was continued until January 24, eight treatments in all being given. It took about three weeks entirely to control the hemorrhage, and it was impossible to get a complete compression of the lung on account of the dense scar around the abscess in the lung tissue. The patient improved somewhat, and was up and around, but still had a slight elevation of temperature, and coughed up large amounts of pus. I understand that he has since had a radical operation performed, consisting of the removal of more than half the right lung, and that he has improved sufficiently to return to work. Pneumothorax probably prevented him from bleeding to death, but on account of the impossibility of our obtaining a complete compression of the lung, a cure could not be effected.

CASE 10.—Mrs. J. P., aged 29, was seen in consultation with Dr. Claytor. Her tonsils had been removed two years previously, the operation being followed by an acute abscess of the left lung. The abscess had become chronic and she had continued to cough up pus for a year. She had then been operated on by Dr. James Mitchell, who had resected one rib posteriorly, opened up the abscess and put in a drainage tube. Her general condition had improved, but she had still continued to drain and cough up pus. I started pneumothorax, April 25, 1917, and continued it until May 27, giving six treatments. On account of pleural adhesions and scars in the lung, only a partial collapse was obtained. For a few weeks the expectoration and drainage diminished very materially, but the improvement was only temporary. Her general condition remains good, but she will probably never be well unless she has a resection of the lung.

SUMMARY AND CONCLUSIONS

Of the ten cases of pulmonary abscess treated, six patients, or 60 per cent., were cured; two, or 20 per cent., were only temporarily improved, and two, or 20 per cent., died. Of the ten patients treated, seven

had the abscess in the right lung, and three had the abscess in the left lung. In four cases in which the abscess was of less than two weeks' duration, a prompt cure was effected. In six cases in which the abscess was of longer duration, two patients were cured, two were temporarily improved, and two died.

In view of the poor results obtained by the usual procedures, pneumothorax used promptly appears to be the rational treatment in all cases of acute pulmonary abscess. In most cases of chronic pulmonary abscess the patients will probably not be materially benefited by the use of pneumothorax.

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HEMORRHAGE INTO AN OVARIAN CYST SIMULATING ECTOPIC PREGNANCY *

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The attention of a small group of observers has been attracted to the clinical resemblance of certain ovarian conditions to ectopic pregnancy. The majority of cases recorded have dealt with the formation of a pelvic hematocele of ovarian origin, usually due to rupture and subsequent hemorrhage from a corpus luteum cyst.

The most important ovarian conditions that may suggest ectopic pregnancy are: (1) a corpus luteum or follicular cyst; (2) torsion of the pedicle of a cyst; (3) rupture of a cyst with or without intra-abdominal hemorrhage; (4) ovarian hemorrhage, and (5) hemorrhage into a cyst. Judging from the literature, the last is infrequent, especially as regards its giving rise to symptoms suggestive of ectopic pregnancy.

The exceedingly close simulation of ectopic pregnancy is well shown in the following instance:

History.—Mrs. D., aged 28, secundipara, whose labors had been normal, the last one occurring fourteen months before, consulted me, Aug. 27, 1916, fearing pregnancy. At that time menstruation was one week overdue. She was in good general health, and menstruation had been entirely regular and normal previously except for some slight discomfort until the flow was established. The cervix was of normal consistency, the fundus not enlarged; both ovaries were distinctly palpable, the left being slightly enlarged and tender. The adnexa, otherwise, were negative. Nothing, in short, besides the nonappearance of the menses was found to suggest pregnancy, and an effort was made to reassure the patient of its improbability. When called three days later, I found the patient suffering with severe abdominal pain, and flowing profusely. The husband, insufficiently reassured of the unlikelihood of pregnancy, had procured some "pills" from another physician to "bring her around." Several of these had been taken on the preceding day. During the night, colicky pains in the lower abdomen occurred, increasing in severity, and accompanied by diarrhea and a profuse vaginal flow. Large clots of blood and fragments of "tissue" were passed, all of which, fortunately, were saved and examined grossly and microscopically. The patient's temperature was 101, and the pulse rate 90 and of good quality. There were marked tenderness and rigidity on the left side of the lower abdomen, but no mass could be felt and no free fluid was demonstrable. Nausea was present, but no vomiting.

Bimanual examination revealed the same condition of the uterus and cervix as was found several days previously, except that the external os was slightly patulous. On the left side of the pelvis, however, a tender globular and cystic mass the size of a goose egg could be determined. It was but slightly movable, and corresponded in position to the ampullary region of the tube or the ovary. There was no bulging of the culdesac. As the general condition, quality and rate of the pulse did not suggest intra-abdominal hemorrhage, an expectant procedure was adopted with absolute rest in bed and application of an ice bag over the lower abdomen.

The tissue passed by the vagina was found to consist of practically a complete triangular cast of the uterine cavity, such as will often be passed in cases of ectopic gestation after intra-abdominal rupture or operative removal. Microscopically, the cast was shown to be a rather hyperplastic endometrium, but it showed no decidual reaction or the presence of decidual cells. There was no evidence of chorionic villi or other fetal elements in either the membranes or the clots. Accordingly, the possibility of an intra-uterine pregnancy seemed to be eliminated and the likelihood of an ectopic gestation somewhat in doubt, for the endometrial casts in the latter condition usually show a decidual reaction.

On the following day the patient's condition was about the same with regard to pain in the left side, though perhaps it was more constant and less colicky in nature. The flow had decreased somewhat. A leukocyte count on this day (September 2) showed a total white blood count of 18,000, with polymorphonuclears 82 per cent. The temperature was 99.4. The pelvic condition was the same as on the preceding day, and the general condition, color and pulse manifested no evidence of internal hemorrhage.

During the next week in watchful expectancy the pain became less severe, though persistent, and the flow practically ceased. The temperature varied from normal to 100, while the pulse rate rarely exceeded 90. Loss of appetite and occasional nausea persisted. There was no demonstrable change in the pelvic condition noted previously. As there was no appreciable improvement in the local condition, operation was decided on. The diagnosis at the time lay between (1) hemorrhage into a corpus luteum; (2) a twist of the pedicle of an ovarian cyst; (3) tubal pregnancy unruptured, or (4) a tubal abortion. The clinical course and findings on examination favored the diagnosis of hemorrhage into a corpus luteum.

Operation and Result.—Sept. 11, 1916, a transverse incision revealed no free blood in the peritoneal cavity. The uterus was not enlarged; it was in midposition. The left ovary was transformed into a dark, tense cyst the size of a small apple. There was no torsion of its pedicle. The right ovary contained a corpus luteum of normal appearance. Both tubes were normal. Left ovariectomy, the Willis operation for shortening the round ligaments, and appendectomy were followed by dilatation of the cervix and curettage. The curettings were moderately abundant and showed, microscopically, complete regeneration of the endometrium with slight glandular hyperplasia.

Convalescence was uneventful, and menstruation since has been entirely painless and otherwise normal. Grossly, the left ovary was practically replaced by a tense, dark, thin-walled, unilocular cyst with dark bloody content. Microscopically, the cyst wall was shown to consist of fibrous and scanty stroma tissue without definitely distinguishable epithelial lining. No lutein cells were in evidence. In the basal portion of the cyst wall, where more ovarian tissue was present, there were numerous small areas of petechial or interstitial hemorrhage.

COMMENT

A retrospective analysis of this case presents several features of speculative interest:

1. *The Causal Relationship of Ovarian Cysts to Perverted Menstruation.*—The inhibitory influence of ovarian cysts, either of follicular or corpus luteum origin, on the periodicity of menstruation has been observed by Halban[1] and more recently corroborated and substantiated by Rubin.[2]

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1. Halban: Jour. Gynec., 1915, **34**.
2. Rubin: Surg., Gynec. and Obst., 1917, **24**, No. 4.

In the case I have reported, menstruation was delayed one week in spite of an apparently fully developed corpus luteum in the other or normal ovary. Naturally, a very early uterine pregnancy and abortion must be considered a possible explanation for this delay; but careful microscopic examination of the tissues passed by the vagina failed to reveal even suggestive evidence of pregnancy, and subsequent operation did not reveal an ectopic gestation.

It seems reasonable to attribute the unusually profuse flow, the severe dysmenorrhea, and the passage of an endometrial "cast" to the emmenagogic action of the drug which was taken in this instance for that purpose.

2. *The Etiology of Ovarian Hemorrhage.*—Apparently, in this instance hemorrhage occurred into the cyst coincidently with the onset of the menstrual flux. Accordingly, pelvic congestion accentuated by an oxytocic agency is to be considered as a probable etiologic factor. Novak,[3] in discussing the etiology of ovarian hemorrhage, regards hyperemia, either active or passive, as a predisposing factor. He states that frequently hemorrhage occurs in the walls of atretic follicles, but even more often in corpus luteum or corpus luteum cysts. Subsequent rupture and free intra-abdominal bleeding will depend on the proximity of the follicle or cyst to the surface.

Ohman,[4] in reporting six illustrative cases, classifies ovarian hemorrhage into three groups: (1) intrafollicular hemorrhage; (2) intrastromal or interstitial hemorrhage, and (3) hemorrhage into a corpus luteum. Groups 1 and 2 may be combined. He regards the direct etiologic factors as being obscure. In none of his cases, however, is there definite relationship to menstruation. Jones,[5] too, is of the opinion that menstrual congestion is probably an unusual factor in ovarian hemorrhage. Cantoni,[6] on the other hand, points out the fact that the ovary is peculiarly liable to circulatory disturbance, and has a normal predisposition to periodic hemorrhage, as in the case of bleeding from the walls of the graafian follicles after rupture and extrusion of the ovum. Physiologically, an active hyperemic condition of the ovary occurs in the premenstrual phase, in coitus, and during pregnancy. Pathologically, hyperemic (passive) states result from venous stasis due to pressure of a pelvic tumor, fixed displacements of the uterus, and torsion of the pedicle of the ovary. It would seem quite rational to attribute to hyperemia, either active or passive, at least a predisposing feature in the etiology of ovarian hemorrhage. The direct or exciting factor will often remain obscure. Perhaps it will be some slight trauma, or a mild temporary torsion that momentarily increases capillary tension to the breaking point.

Certainly in the case I have cited, temporary torsion cannot be disregarded as a possible cause of hemorrhage, for, given an enlarged cystic ovary, let us say, actively congested and buffeted around by the intestine in violent peristalsis following the administration of an oxytocic, a slight degree of torsion would be sufficient to produce capillary rupture in the cyst wall and then into its cavity. The presence of multiple minute interstitial hemorrhages in the basal part of the cyst wall would further this suggestion.

3. *Intracystic Ovarian Hemorrhage Simulating Ectopic Gestation.*—The perversion of menstruation due to ovarian cyst, more particularly corpus luteum cysts, may give rise to the suspicion of tubal pregnancy. Rubin[2] cites several instances illustrating this close clinical resemblance. Early uterine pregnancy associated with an ovarian cyst may likewise suggest tubal gestation. Dorman[7] reports such an instance in which operation revealed a two months' intra-uterine pregnancy, and a large corpus luteum cyst.

Intracystic hemorrhage, as an additional feature in furthering the simulation of ectopic gestation, is, apparently, an unusual coincidence. Its occurrence would usually give rise to more acute manifestations suggestive of tubal abortion or rupture. The case I have reported is rather unique, since practically all of the symptoms of tubal pregnancy, both subjective and objective, were present, even to the passage of a cast of the endometrium.

A meager literature bearing on this subject brings to light only a few paralleling instances. One reported by Weinbrenner[8] is particularly comparable to mine in that after a delay in menstruation, the sudden onset of a severe dysmenorrhea, with other clinical evidence, strongly suggested ectopic pregnancy. Operation, however, revealed hemorrhage into a corpus luteum cyst. A somewhat similar instance is reported by Lee.[9]

CONCLUSION

It should be kept in mind that corpus luteum or follicular cysts of the ovary may be the cause of delayed menstruation, may, further, give rise to pain, and may thus suggest ectopic pregnancy. With the foregoing manifestations, and in the absence of shock or evidence of intraperitoneal hemorrhage, the diagnosis of unruptured tubal pregnancy or of a corpus luteum or follicular cyst of the ovary will often be in doubt. The rational and safe procedure is early exploratory operation.

3. Novak, Emil: Abdominal Hemorrhage of Ovarian Origin, THE JOURNAL A. M. A., April 21, 1917, p. 1160; Hematomata of the Ovary, Including Corpus Luteum Cysts, Bull. Johns Hopkins Hosp., 1917, **28**, 349.
4. Ohman, K. H.: Monatschr. f. Geburtsh. u. Gynäk., 1913, **38**, 283.
5. Jones: Surg., Gynec. and Obst., 1913, **16**, No. 1.
6. Cantoni: Arch. Gynäk., 1914, **103**, No. 3.
7. Dorman: Tr. New York Acad. Med., Sec. Obst. and Gynec., Nov. 24, 1912; abstr., Am. Jour. Obst., 1913, **67**, 422.
8. Weinbrenner: Monatschr. f. Geburtsh. u. Gynäk., 1906, **24**, No. 3.
9. Lee: Brooklyn Med. Jour., **19**, 209.

THE PLACE OF INTRASPINAL THERAPY IN UROLOGY *

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The introduction of various therapeutic agents into the spinal canal in attempts to cure neural syphilis is a comparatively new procedure. In spite of over five years of its rather general employment, however, and the varied series of reported cases by many workers, its exact status is still somewhat uncertain. The demonstration by Noguchi and Moore[1] in 1913 of *Spirochaeta pallida* in stained sections from the brain tissue of persons who had died of general paresis, and the close relation between this condition and tabes dorsalis, leave little doubt as to the causative agent in these diseases. To Swift and Ellis,[2] however, belongs the credit for the really remarkable discovery of the

* Read before the Buffalo Academy of Medicine, Dec. 5. 1917.
* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital, Baltimore.
1. Noguchi and Moore: Jour. Exper. Med., 1913, **17**, 232.
2. Swift and Ellis: New York Med. Jour., 1912, **96**, 53.

efficacy of intraspinal therapy in certain types of syphilitic involvement of the cerebrospinal system.

Through the observations of Taege,[3] who noted that the milk of a syphilitic mother, under salvarsan therapy, had a markedly curative effect on her syphilitic child, and also those of Meirowsky and Hartman,[4] of Plant,[5] and of Gibbs and Calthrop,[6] who observed improvement in primary and secondary syphilis under subcutaneous injections of serum in patients treated with salvarsan, the way for this newer specific serum therapy was unquestionably paved. Wechselmann[7] in 1912, using neosalvarsan, was the first to employ intraspinal therapy. In his hands the results were doubtful and the reactions very severe. Marinesco[8] in 1913, following essentially the same technic, came to practically the same conclusions. In 1912, Swift and Ellis reported their results of the use of autosalvarsanized serum intraspinally in cases of tabes and general paresis, and since then their method has been rather generally employed in this country. Ravaut[9] in 1913 reported two cases of cerebrospinal syphilis treated subdurally with injections of neosalvarsan and mercury, and later, in 1914, began using unchanged neosalvarsan intraspinally in hypertonic solutions in freshly distilled water. At the same time Marie and Levaditi[10] were making similar studies by the same method in cases of general paresis. In 1914, Ogilvie[11] modified the Swift-Ellis method by adding definite amounts of salvarsan directly to the patient's serum that was used for intraspinal injections.

In 1914, Byrnes[12] advocated the use of mercurialized human serum intraspinally. He found that from $\frac{1}{50}$ to $\frac{1}{25}$ grain of mercuric chlorid added to 12 c.c. of a patient's serum to form an albuminate of mercury, and the whole brought up to 30 c.c. by the addition of physiologic sodium chlorid solution could be introduced into the spinal canal with impunity. At that time Byrnes reported the results of treatment in thirty-two cases. His series included thirteen cases of tabes, two of taboparesis, three of specific meningitis and fourteen of general paresis. Of the bladder symptoms in tabes, Byrnes briefly reports that these were greatly improved. Haller,[13] in a series of patients receiving intraspinal treatment, mentions one having incontinence. This patient improved under specific intraspinal treatment. Also Wolfsohn,[14] in a recent report of a number of intraspinal cases, cites two tabes patients having incontinence of urine, both of whom recovered normal urinary control under mercurialized serum administered intraspinally. More recently, Burns,[15] describing the bladder changes due to specific lesions of the central nervous system, has reported twenty-one cases, in some of which there was urinary incontinence; many of these patients regained normal urination under intraspinal injections of mercurialized serum.

3. Taege: München. med. Wchnschr., 1910, **57**, 1725.
4. Meirowsky and Hartman: Med. Klin., 1910, **6**, 572.
5. Plant: Deutsch. med. Wchnschr., 1910, **26**, 2237.
6. Gibbs and Calthrop: Brit. Med. Jour., 1911, **1**, 809.
7. Wechselmann: Deutsch. med. Wchnschr., 1912, **38**, 1446.
8. Marinesco: Ztschr. f. phys. u. diät. Therap., 1913, **17**, 194.
9. Ravaut: Ann. d. méd., 1914, **1**, 49; Gaz. de hôp., 1913, **86**, 1061.
10. Marie and Levaditi: Bull. et mém. Soc. méd. d. hôp. de Paris, Nov. 18, 1913.
11. Ogilvie, H. S.: The Intraspinal Treatment of Syphilis of the Central Nervous System with Salvarsanized Serum of Standard Strength, THE JOURNAL A. M. A., Nov. 28, 1914, p. 1936.
12. Byrnes, C. M.: The Intradural Administration of Mercurialized Serum in the Treatment of Cerebrospinal Syphilis, THE JOURNAL A. M. A., Dec. 19, 1914, p. 2182.
13. Haller, D. A.: The Treatment of Syphilis of the Central Nervous System, Arch. Int. Med., June, 1917, p. 997.
14. Wolfsohn: Am. Jour. Med. Sc., 1917, **153**, 265.
15. Burns: Surg., Gynec. and Obst., 1917, **24**, 659.

INTRASPINAL THERAPY IN SIXTEEN UROLOGIC CASES

For the purpose of this study, sixteen cases of tabes and cerebrospinal syphilis presenting essentially urologic symptoms, namely, incontinence or other irregularities of urination, together with certain sexual symptoms, were selected from the recent records of the Brady Urological Institute. The cases selected were only those in which the urologic symptoms predominated, and these have thus been grouped:

1. Complete or marked urinary incontinence occurred in three, or 18.75 per cent.
2. Slight incontinence of urine, often at night, was present in seven additional cases, or 43.75 per cent.
3. Increased frequency of urination was noted in eight, or 50 per cent.
4. Dribbling after urination was present in ten, or 62.5 per cent.
5. The feeling of inability completely to empty the bladder was complained of by three, or 18.75 per cent.
6. Change in sexual powers, ranging from a diminution to a complete loss of potentia, was present in fifteen, or 93.75 per cent.
7. Pain in the back and legs, varying from a dull ache to the characteristic lightning pains, was complained of by eleven, or 68.75 per cent.
8. Ataxia, while not a urologic symptom, was noted in eight, or 50 per cent., of the cases.

The bladder examination in these patients showed that twelve, or 75 per cent., had residual urine, usually over 100 c.c., and the largest 900 c.c. Among the cardinal diagnostic points, eight, or 50 per cent., showed a dilatation of the internal vesical sphincter, while a certain laxness or diminished tonicity in the rectal sphincter was noted in ten cases, or 62.5 per cent. The capacity of the bladder was increased above normal in six cases, or 37.5 per cent., the largest being 1,200 c.c. The blood examination revealed a negative Wassermann reaction in ten cases (nine of which gave a history of some form of specific antisyphilitic treatment). In six cases the Wassermann reaction was positive in the blood serum.

In the presence of the clinical symptoms and suggestive objective findings, the definite evidence of specific spinal cord disease was found in the spinal fluid in every case. The spinal fluid examination has consisted in the determination of the spinal fluid pressure, the Wassermann reaction, a cell count, a study of the excess of globulin present as evidenced by the Ross-Jones and the Pandy tests, and finally the determination of the colloidal gold reaction. Fifteen of the patients showed a positive Wassermann reaction in the spinal fluid on admission, and the sixteenth was found strongly positive after one intraspinal treatment, which measure acted unquestionably as a provocative step. Eleven cases had a cell count above 10 per c.m. The globulin test performed by both the Ross-Jones and Pandy tests showed a positive precipitation in every instance. Fifteen cases showed a definite change in the colloidal gold reaction, giving typical paretic or syphilitic curves. One case showed practically a negative curve, decolorizing only the second tube in the dilutions of 1:40 and 1:80.

The form of treatment in these cases has consisted in every instance of intraspinal injections of mercurialized serum. The serum has been the commercial product made up with $\frac{1}{25}$ and also $\frac{1}{50}$ grain of mercuric chlorid dissolved in normal horse serum and the

whole brought up to 30 c.c. by the addition of physiologic sodium chlorid solution. The strength of 1/50 grain of mercuric chlorid has been found the most satisfactory, and has been generally used. The treatments have in the main been given one week apart until four have been received, when a rest of from four to eight weeks is advised. At the end of this time further serologic studies are made, and if the findings warrant, the series of injections is repeated. The technic of the injection has been the ordinary lumbar puncture between the second and third or third and fourth lumbar vertebrae after the skin has been thoroughly cleaned with iodin. The spinal fluid is allowed to run from the needle until the pressure is reduced to 20 mm. of water or lower. The rubber tube with the ampule of serum is then attached to the needle, and its contents are allowed to run into the spinal canal. The rapidity of flow is regulated by slightly elevating or lowering the ampule of serum. The full 30 c.c. is allowed to flow in usually without difficulty. The foot of the bed is then elevated 8 inches for from thirty minutes to two hours. In cases with a positive Wassermann reaction in the blood serum, intravenous salvarsan or diarsenol is administered at weekly intervals in doses of from 0.4 to 0.6 gm. each until four are taken, in addition to the intraspinal therapy. The individuals with residual urine and incontinence and also those with frequency and dribbling have in addition been treated locally every five to seven days with dilations of the posterior urethra, and internal and external sphincters with the Kollman dilator. It has seemed of some benefit in these cases with urinary symptoms thus to stretch the poorly innervated sphincteric fibers in an attempt to improve their diminished tone.

To the sixteen patients have been given seventy-one intraspinal injections, an average of over four to each patient, while the most any one patient received was thirteen. These have been given with no deleterious effect whatsoever. Despite the fact that the mercuric chlorid was in a solution of horse serum, there have been noted no cases of anaphylaxis, nor has there been found any report in the literature of such a complication following intraspinal medication when mercurialized serum made in this manner was used. The reactions following this treatment have varied from none to moderately severe. Usually one dose of morphin and rarely two have been sufficient to control all pains, which for the most part are confined to the back and legs. Frequently no sedative is required. A moderate elevation of temperature ranging from normal to 103.5 F. may be expected. This reaches the maximum about ten hours after the injection, and usually returns to normal by the end of from thirty-six to forty-eight hours and frequently before. Headache of a moderate grade is occasionally present. Nausea and vomiting may occur, but are very rare. Absolute rest in bed, the patient lying flat on the back, with the administration of a sedative when indicated, seem to be the most important measures for the comfort of the patient.

Under therapy the changes in the spinal fluid findings have been striking. In seven cases the Wassermann reaction was changed from positive to negative, and in six additional cases the degree of fixation was greatly reduced, frequently requiring four times the usual amount of fluid to give even a 25 per cent. fixation. In five cases the colloidal gold curve was made negative after a previous syphilitic or paretic zone, and in five additional cases the gold curve was notably reduced in strength. A reduction in the cell count was noted in eleven cases, and is the first finding to change under this form of therapy. The excess of globulin was reduced in six cases. The colloidal gold test appears more sensitive than the Wassermann reaction in detecting a specific involvement in the cord,

TREATMENT AND RESULTS IN SIXTEEN CASES*

Name	B. U. I. No.	Blood	Symptoms	Diagnosis	Treatment	Spinal Fluid Findings†				Results
						Wassermann	Cells	Globulin	Gold	
W. R. W.	4929	Negative	Incontinence; lightning pains; diminished sexual powers. Residual urine, 820 c.c.	Tabes 3/ 7/16 3/21/16 2/22/17	 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum	 4 4 4 4 4 4	 ‡ 25	 ‡ + +	 23332000	Lightning pains gone; no incontinence; residual urine, 60 c.c.
R. A. F.	5365	Positive	Incontinence; frequency; dribbling; loss of sexual powers. Residual urine, 500 c.c.	Tabes 6/ 8/15 6/15/15 6/22/15 9/22/16 9/25/16 10/ 3/16 10/11/16 12/18/16 1/ 4/17 1/11/17	Salvarsanized serum Salvarsanized serum Salvarsanized serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum	4 0 0 4 4 4 4 0 4 4 4 4 4 4 3 4 4 4 2 0 4 4 0 4	3 8 .. ‡ 16 .. 2 6	+ ++ + ‡ + + + +	+ ++ + + + + +	5544432000 3333220000 2224441100 2333332100 2222311000 1112331000 1111210000	Incontinence improved; dribbling gone; frequency improved; residual urine, 120 c.c.
J. H. G.	4648	Negative	Incontinence; lightning pains; loss of sexual powers; ataxia. Residual urine, 450 c.c.	Tabes 10/15/15 10/22/15	 1/50 gr. Hg serum 1/50 gr. Hg serum	 0 0 0 4 4 4	 4 25	 0 +	 0 +	1110000000 554331100	Incontinence unimproved; lightning pains gone; residual urine 250 c.c.
E. L. B.	5117	Positive	Frequency; dribbling; slight incontinence; decreased sexual powers; ataxia. Residual urine, 900 c.c.	Tabes 5/29/16 6/13/16 6/20/16 6/27/16 11/ 8/16 11/16/16	 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum	 4 4 4 4 4 4 4 4 4 4 4 4 3 4 4 4 4 0	 36 5 13 ‡ 6 ..	 +++ ++ ++++ ‡ + +	 + + ++ + +	 5555421000 5555442210 5555543210 3333300000 4443332100	Frequency and dribbling gone; slight incontinence gone; sexual powers improved; residual urine, 0
B. H. B.	4296	Positive	Frequency; dribbling; slight incontinence; lightning pains. Residual urine, 125 c.c.	Tabes 5/11/15 8/10/15 1/11/16	 1/50 gr. Hg serum 1/50 gr. Hg serum 1/50 gr. Hg serum	 4 4 4 0 0 0 0 0 0	 36 5 4	 + 0 0	 + 0 0	 5555554300 5555432000	Incontinence improved; pains gone; residual urine, 50 c.c.

TREATMENT AND RESULTS IN SIXTEEN CASES—Continued

Name	B. U. I. No.	Blood	Symptoms	Diagnosis	Treatment	Spinal Fluid Findings				Results
						Wassermann	Cells	Globulin	Gold	
J. F. H.	4573	Negative	Slight incontinence; decrease in sexual powers; lightning pains; ataxia. Residual urine, 125 c.c.	Tabes		50% in 0.5 c.c.				No incontinence; no pains in legs; sexual powers normal; residual urine, 0
				9/19/15	1/50 gr. Hg serum	0 0 0	83	+	+ 4444322100	
				9/28/15	1/50 gr. Hg serum	0 0 0	29	+	+ 444332100	
				10/11/15	1/50 gr. Hg serum	0 0 0	40	+	+ 3332221000	
				10/19/15	1/50 gr. Hg serum	0 0 0	..	++	+ 5554443210	
				3/13/16	1/50 gr. Hg serum	0 0 0	8	+	+ 222110000	
						in 1 c.c.				
				10/13/16	1/50 gr. Hg serum	0 0 0	2	+	0 224320000	
				10/23/16	1/50 gr. Hg serum					
J. F. S.	5486	Negative	Slight incontinence; dribbling; diminished sexual powers	Tabes						No incontinence; no dribbling; sexual powers improved
				10/28/16	1/50 gr. Hg serum	4 4 4	42	+	+ 0003330000	
				11/21/16	1/50 gr. Hg serum	3 4 2	16	+	+ 4455532100	
				1/ 3/17	1/50 gr. Hg serum	0 3 0	..	+	+ 1112321000	
E. G. B.	5101	Positive	Slight incontinence; lightning pains. Residual urine, 60 c.c.	Tabes						Incontinence improved; pains relieved; residual urine, 0
				5/15/16	1/50 gr. Hg serum	4 4 4	70	+	+ 2233210000	
				5/22/16	1/50 gr. Hg serum					
				5/29/16	1/50 gr. Hg serum	4 4 4	35	++	++ 4444321000	
				6/ 6/16	1/50 gr. Hg serum	4 4 4	33	++	++ 4444321000	
				10/12/16	1/50 gr. Hg serum	0 0 0	..	0	0 0022200000	
P. H.	4430	Negative	Nocturnal incontinence; loss of sexual powers; weakness in right arm and leg; slight ataxia. Residual urine, 250 c.c.	Tabes						Incontinence less marked; much stronger; gained 24 lbs. in weight; residual urine, 20 c.c.
				7/18/15	15 c.c. saiv. serum	3 0 0	9	+	+ 1111000000	
				7/27/15	1/25 gr. Hg serum	0 0 0	3	±	0 1111100000	
				12/ 6/15	.....	0 0 0	3	0	0	
V. W.	4717	Negative	Slight incontinence; loss of sexual powers; pain in legs; slight ataxia	Tabes		75% in 1 c.c.				
				11/20/15	1/50 gr. Hg serum	0 0 0	8	+	+ 4444321100	
				11/27/15	1/25 gr. Hg serum	0 0 0	8	+	+ 11233 1110	
				12/12/15	1/50 gr. Hg serum	0 0 0	8	+	0 2111100000	
L. M.	2541	Negative	Difficulty in urinating; dribbling; frequency; slight diminution in sexual powers. Residual urine, 525 c.c.	Tabes						Urinary symptoms all improved; sexual powers improved; residual urine, 60 c.c.
				5/ 1/15	1/50 gr. Hg serum	2 3 2	11	+	+ luetic	
				5/20/15	1/25 gr. Hg serum	0 0 0	26	+	+ negative	
				5/31/15	1/50 gr. Hg serum	0 2 2	8	+	+ negative	
G. B. T.	1669	Negative	Slight frequency; dribbling; diminished sexual powers; slight ataxia; slight pain in legs. Residual urine, 175 c.c.	1/29/16	1/50 gr. Hg serum	1 4 1	6	+	+ 4455431000	Pains relieved; frequency and dribbling improved; residual urine, 0
						100% in 0.5 c.c.				
				2/ 7/16	1/50 gr. Hg serum	0 0 0	11	+	++ 4443320000	
						100% in 0.5 c.c.				
				2/17/16	1/50 gr. Hg serum	0 0 0	13	++	+ 5555533100	
				10/22/16	1/50 gr. Hg serum	0 0 0	3	+	+ 5544331000	
D. C. O.	4723	Negative	Slight frequency; dribbling; loss of sexual powers; pains in legs; ataxia			50% in 1 c.c.				Frequency and dribbling much improved; pains in legs gone; sexual powers improved; ataxia less marked; residual urine, 10 c.c.
				11/21/15	1/50 gr. Hg serum	0 0 0	5	+	+ 2333321000	
				11/28/15	1/50 gr. Hg serum					
				12/ 9/15	1/50 gr. Hg serum	1 2 0	20	++	+ 3344373210	
				12/17/15	1/50 gr. Hg serum	3 4 2	46	++	++++ 23333.1000	
						100% in 0.5 c.c.				
				1/12/16	1/50 gr. Hg serum	0 0 0	5	+	0 4444310000	
						100% in 0.5 c.c.				
				1/21/16	1/50 gr. Hg serum	0 0 0	..	+	++ 2333321000	
						100% in 0.5 c.c.				
				3/28/16	1/50 gr. Hg serum	0 0 0	4	++	+ 2233210000	
						100% in 0.5 c.c.				
				4/13/16	1/50 gr. Hg serum	0 0 0	..	+	+ 2332100000	
				5/20/16	1/50 gr. Hg serum	0 0 0	6	++	+ 2233210000	
				9/ 4/16	1/50 gr. Hg serum					
						25% in 1 c.c.				
				9/11/16	1/50 gr. Hg serum	0 0 0	‡	‡		
				9/18/16	1/50 gr. Hg serum	0 0 0	‡	‡		
				9/27/16	1/50 gr. Hg serum	0 0 0	..	+	+ 1113332100	
M. S. F	5451	Positive	Frequency; dribbling; diminished sexual powers; pains around waist	Tabes						Pains disappeared; no urinary symptoms; sexual powers improved
				10/21/16	1/50 gr. Hg serum	4 4 4	51	+++	+++ 5555554200	
				10/28/16	1/50 gr. Hg serum	4 4 4	30	+++	+++ 5555442100	
				11/ 4/16	1/50 gr. Hg serum					
				11/11/16	1/50 gr. Hg serum	4 4 4	20	++	+++ 5555555100	
Q. L. B.	4955	Negative	Urinary frequency; dribbling; pains in legs	Tabes		100% in 1 c.c.				Pains relieved; urinary symptoms gone
				3/ 7/16	1/50 gr. Hg serum	0 0 0	5	+	+ 2234320000	
						100% in 0.5 c.c.				
				3/16/16	1/50 gr. Hg serum	0 0 0	‡	‡		
						50% in 0.5 c.c.				
				4/10/16	1/50 gr. Hg serum	0 0 0	8	+	+ 2332100000	
				9/12/16	1/100 gr. Hg serum	0 0 0	..	+	+ 1111000000	
						0 in 0.5 c.c.				
						100% in 1 c.c.				
				12/23/16	1/100 gr. Hg serum	0 0 0	3	++	++ 1112222111	
F. O. E.	5364	Negative	Diminished sexual powers; pain in back and legs	Tabes						Pains completely relieved; sexual powers normal
				9/25/16	1/50 gr. Hg serum	3 4 3	‡	‡		
				10/ 2/16	1/50 gr. Hg serum	0 4 3	‡	‡		
				10/11/16	1/50 gr. Hg serum	4 4 4	4	+	+ 0013331000	
						100% in 1 c.c.				
				10/18/16	1/50 gr. Hg serum	0 0 0	33	+	+ 4454321000	

* In the spinal fluid examinations, three different antigens were used in determining the Wassermann reaction, and the amount of fluid used was 0.25 c.c. The figures signify: 4, 100 per cent. fixation; 3, 75 per cent.; 2, 50 per cent.; 1, 25 per cent. When negative results were obtained, the amount of fluid was increased to 0.5 c.c. and 1 c.c., and in certain cases positive results were obtained in double and quadruple quantities as indicated. In cases in which an increased amount of fluid was used, a positive result was obtained only with the most sensitive antigen, the other two still showing negative results. In the globulin tests the Pandy results are tabulated in the first column and the Ross-Jones results in the second.

† In each instance the spinal fluid findings were determined before the injection of the serum.

‡ Bloody fluid.

and frequently will show positive results for some time after the Wassermann reaction has become negative. After the first treatment, the entire serologic findings may be increased in strength; but following subsequent treatments, they show a reduction, even returning to normal in certain cases. It is perhaps more correct to interpret this as a provocative finding than as an irritative chemical phenomenon. Contrary to some observers,[16] it seems that the gold test as well as the Wassermann test may show a provocative reaction, as was obtained in one case, which after the first treatment gave a paretic gold curve and 100 per cent. fixation with all three antigens, whereas previously the spinal fluid findings were absolutely negative.

As regards the symptomatic improvement, one patient with marked incontinence was cured, one was improved, being able to urinate normally and having no incontinence at any time when he passes the catheter once in twenty-four hours to relieve the residual urine, and the third was unimproved. Three patients having slight incontinence were cured and four additional were greatly relieved, now rarely having any nocturnal incontinence except after taking a considerable amount of water before retiring. Four patients having an increased frequency now hold the urine three to four hours, and four additional patients are markedly improved. The dribbling after voiding has disappeared in four cases, and has notably improved in six others. The improvement in sexual powers has been noted in eight cases, and of these, two report that they are normal. Five have noted no change in their sexual powers since taking treatment. Of those having pain in the back and legs, the entire eleven report that the pains have disappeared. Of twelve patients having residual urine, the catheter now reveals in every case a reduction in the amount, five showing no residual and in three others it being less than 60 c.c. The most striking case showed a reduction from 900 c.c. to none.

From this rather limited series of cases it seems that there is a definite indication for spinal treatment in many if not all persons having specific cord disease, and that we are justified in holding out a certain hope of improvement in many instances. The fact that bladder symptoms occupy often a very prominent place in syphilitic cord involvement and that the secondary kidney lesions contribute in no small measure to their impaired health place these patients often under the care of the urologist. In view of the chronicity of the disease and the not infrequent periods of spontaneous improvement, it appears in spite of all this that this form of treatment has a very definite value. The last word on the worth and place of intraspinal therapy is yet to be said; but until then it appears to offer a certain symptomatic relief in these heretofore rather hopeless cases.

CONCLUSIONS

1. In syphilitic involvement of the spinal cord, mercurialized serum administered intraspinally relieves in a considerable measure the urologic symptoms, that is, incontinence, frequency, dribbling and diminished sexual powers. Residual urine is reduced in amount.

2. Coincident serologic improvement also is noted, but this may not be commensurate with the symptomatic relief.

3. The colloidal gold test as well as the Wassermann test may show a provocative positive after an intraspinal treatment.

4. No anaphylactic symptoms were encountered in this series, in which mercury in a foreign serum was used.

607 Electric Building.

16. Black, J. H.; Rosenberg, Louis, and McBride, R. B.: The Colloidal Gold Test, The Journal A. M. A., Dec. 1, 1917, p. 1885.

Military Medicine and Surgery

SOME LESSONS FROM THE DRAFT EXAMINATION *

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The general death rate is a rough index to the health of a nation. This factor, however, is a product of so many influences — age, sex and race distribution, and social, industrial and agricultural distribution — that, standing alone, it is not a final and complete indicator of the inherent vitality of a nation. A complete and accurate morbidity rate would supply information of enormous value; but such rates are, of course, lacking. The ideal method for determining the vitality of a nation or of a body of individuals is to ascertain the morbidity rate and death rate corrected for age and sex distribution and, so far as possible, for other influential factors, and to make a complete and accurate physical survey of the individuals composing the group. The survey of a group having a death rate favorable according to accepted standards will reveal astonishing conditions. It becomes quickly apparent that the morbidity rate, as ordinarily understood, could not, in the present state of knowledge, convey a clear idea of the actual condition of the group. It is safe to say that among medical men and those familiar with morbidity and mortality records, there has been a general disposition to classify people into three groups, the well, the sick and the dead, if the dead can properly be regarded as people. It is only when we leave the records of the hospital and the cemetery, and the data derived from general observation in the private practice of physicians and, taking the group classified as well, subject it to a critical and standardized physical analysis, that we secure a true pathologic map of humanity in its progress from the cradle to the grave.

I have previously dwelt with some emphasis on these principles, and have presented figures revealing the degree of impairment that has been found to exist among groups of supposedly healthy persons. I now present figures from other sources, with no flavor of so-called idealism surrounding them. They are derived from the stern reality of war. They were elicited through the operation of military machinery established to carry through a tremendous physical "try out" of the nation, or at least, of the very core of the nation, our young men between the ages of 21 and 31.

In the examinations of large groups of supposedly healthy persons, busy at their work, the Life Extension Institute found practically all showing some form of impairment, and more than 50 per cent. in need of medical or surgical attention. These findings led to

* Delivered before Section I, American Association for the Advancement of Science, Dec. 31, 1917.

the forecast, before the draft examinations took place, that among the population of military age, from 19 to 45, at least 50 per cent. would be found unfitted for military service, even under relaxed war standards, which are necessarily less rigid than those for the maintenance of a small and select peace army. The figures for all local boards are not yet available, but I have collected figures from local boards of different types, the average of which may be fairly accepted as representing the conditions in the age group covered by the draft. In these boards investigated in Detroit, Brooklyn and New York, the total number called were 8,875, the total number examined 7,611, and the total number rejected for physical reasons 2,232, giving a rejection rate for physical reasons of 29 per cent. The rejections in the cantonments of those passed up by the local boards have varied between 2 and 11 per cent. It is safe to say, therefore, that the total rejection rate for physical reasons would lie between 30 and 40 per cent. and this in the most favorable age group. It is true that under the tremendous strain of an emergency organization for doing this work, the work was not always done in an ideal way.[1]

Any one who doubts the adaptability of this country to war conditions need only observe the modifications that have been made in the selective service regulations based on lessons learned from these early examinations. The organization for the coming examination of registrants will be done in a far more systematized and intensive way and involve a more complete and expert sifting of the material with a view to employing men in the capacity for which they are best fitted. The creation of special classes of registrants who are not fitted for regular military service, but are still available for sedentary work, is an excellent feature of the new regulations. The same is true of the establishment of consulting or advisory boards of experts to pass on borderline cases and refer them back to the local boards, thus insuring absolute fairness and accuracy in the work and eliminating, so far as possible, the rejections at the cantonments, which are burdensome and expensive for the military establishment. Making all due allowance for the haste and more or less coarse sifting characterizing the first draft examinations, it is evident from the figures herein presented that there are substandard physical conditions among the young and supposedly vigorous groups in our population that only the tremendous emergency of war could bring clearly into the consciousness of our people.

CAUSES OF REJECTION

An analysis in detail of the causes of rejection clearly indicates the preventable nature of these impairments, and also clearly points the way to remedial and preventive work. It is true that some individuals show a combination of impairments, and that in the classification only the prominent defect is noted. It should be remembered that these examinations were not complete, and did not, as a rule, go beyond the defect necessary to warrant rejection. The classification of the causes of rejection under these conditions is, therefore, an exceedingly difficult matter and can be accomplished in only a rough and approximate way; nevertheless, the figures given in Table 1 have an important suggestive value.

As some boards included two prominent causes of rejection, the total of this column will exceed the total of those actually rejected.

It may be said that some of these defects are purely structural and, in a sense, anatomic, and do not reflect substandard general health conditions; but when we find such a very heavy percentage of eye defects, for example, to a degree that disqualifies for military service, then we are justified in regarding such a degenerative tendency as reflecting some fault in nutrition or in the care of the body or in the use of the eyes, and failure to secure early correction of refractive errors. It is not safe, therefore, to dismiss these cases as those of local structural defect only, having no bearing on the general health or hygiene of the people.

When we come to the other prominent causes of rejection, there can be no dispute as to their significance. Underweight, to a degree that has caused rejection in the recent examinations, is, as a rule, a reflection of a distinctly substandard physical condition. After the examinations were in full progress, most of the examiners were quite liberal in their ruling on weight, passing up to the cantonments men who showed any possibility of reconstruction and improvement; hence the residue must be regarded as of poor type, undernourished and distinctly unfitted for military service. They need to be placed under close observation either for hookworm disease, tuberculosis or malnutrition, and they are certainly in urgent need of physical training in the open under proper government.

TABLE 1.—ANALYSIS OF SEVEN LOCAL BOARDS IN DETROIT, BROOKLYN AND NEW YORK

	Number	Percentage of Those Examined
Number of men called	8,875	....
Number of men examined	7,611	....
Number of men discharged for physical reasons	2,232	29
Prominent Causes of Rejection:		
Eyes	462	6
Teeth	366	4.8
Underweight	350	4.6
Hernia	223	2.9
Heart	184	2.4
Feet	180	2.3
Injured or amputated limbs	169	2.2
Ears	88	1.2
Tuberculosis of lungs	77	1
Tuberculosis of joints	2	....
Undersize	53	.7
Genito-urinary, bladder, etc.	37	.5
Varicose veins	35	.4
Overweight	32	.4
Syphilis	32	.4
Varicocele	28	.3
Deformity of trunk	38	.5
Asthma, bronchitis, etc.	21	.3
Mental and insane	14	.2
Debility and poor physique	16	.2
Miscellaneous injuries	15	.2
Hemorrhoids	13	.2
Kidney disease	10	.1
Rheumatism	8	.1
Miscellaneous defects	7	.1
Epilepsy	7	.1
Fistula	5	.06
Alcoholism	4	.05
Hydrocele	4	.05
Diabetes	4	.05
Goiter	6	.08
Deaf mutes	6	.08
Skin	4	.05
Liver and gallbladder	3	.04
Drug habit	3	.04
Injury to nervous system	3	.04
Kidney removed	2	.02
Neurasthenia	1	.01

1. This was written a few days before the appearance of the Provost Marshal General's report in which a rejection rate, for physical reasons in all local boards, of 29.11 is given. The following is a digest of the Provost Marshall General's figures, which shows that the total percentage of rejection actually lies between 30 and 40 per cent. as predicted. It must be remembered that there will be further rejections before the troops are inducted into active service.

Total called	3,082,946	
Total examined by local boards	2,510,706	
Total rejected by local boards for physical reasons	730,756	
Percentage of those examined		29.11
Add 5.8 per cent. rejected at cantonments (estimated)		33.1

About teeth there can be no dispute. Mouth infection is a menace to health, and missing teeth indicate probable past impairment. A young man who has lost so many teeth that he is not eligible for military service on that ground alone should be an object of concern to the community. Grave conditions of mouth infection are liable to develop into actual organic disease.

Hernia, another leading cause of rejection, is not a manifestation of ill health, but is a menace to the individual.

With the exception of mutilations, practically all the other impairments listed evidence ill health; flatfoot and foot deformities are mostly reflections of muscular impairment or faulty footgear and improper posture.

While the figures showing the rejection rate among applicants for enlistment in the United States Navy and Marine Corps are not so representative of average groups in the population, and the standards and technic of the examinations are different from those maintained in the recent draft, nevertheless, their testimony is along the same general lines and similar to that furnished by the Life Extension Institute. These figures are given in Table 2.

TABLE 2.—ANALYSIS OF PHYSICAL CAUSES FOR REJECTION FOR MILITARY SERVICE, U. S. NAVY AND MARINE CORPS, 1915 (REPORT OF SURGEON-GENERAL)

	Number	Percentage of Men Examined
Total number of applicants	106,392	....
Total number rejected for all causes	74,280	....
Causes of Rejection:		
Eye	12,374	11.6
Flatfoot	8,188	7.7
Defective teeth	7,751	7.3
Varicocele and varicose veins	4,598	4.3
Deformities	4,292	4.3
Heart affections	3,149	2.0
Hernia, or tendency to hernia	1,647	1.5
Venereal diseases	1,455	1.4
Ears	1,349	1.3
Skin diseases	1,196	1.1
Hemorrhoids	1,105	1.04
Tuberculosis or suspects	730	.07
Nasal abnormalities	597	.06
Mental diseases	273	.03
Other miscellaneous causes	25,621	24.3

CORRECTION OF PHYSICAL DISABILITIES

In considering these figures, the question at once arises, Are the conditions that they reveal inevitable? Is this high percentage of unfitness for general life struggle as well as for military struggle a necessary by-product of our civilization? The most superficial analysis shows very clearly that at least 60 per cent. of these rejected men owe their impairments either to ignorance or to neglect. While it is impossible to attain that perfect degree of social adjustment whereby all such ignorance or neglect can be removed, and complete and successful attention to the needs of defective humanity assured, at least there will be a long step forward when the degree of preventable impairment is known and the lines along which prevention must move are laid down. Now that the fundamental error, that practically all persons who are busy at their work are sound and fit, has been removed, the way is open for action.

Action at the present time is not merely a matter of plainly indicated social reform, it is a matter of military necessity. President Wilson has said, "It is not an army we must shape and train for war; it is a nation." If this be true, as no one alive to the magnitude of the struggle can doubt, that part of the nation unfit for military service surely needs our attention. If 40 per cent. of those between 21 and 31 are unfit, what may be expect beyond 31? Sixty per cent. of unfitness between 31 and 45 would be a conservative estimate if reasonable standards are maintained, standards that aim to exclude men who would almost certainly be injured and broken by war service, even though unwounded. When a nation puts its final reserves into the field, it must utilize even those who can be of temporary service, and the present standards in the European armies are approaching that point. With our vast population, we may be able to throw into the balance sufficient men to end the war without calling on our final reserves for field service. But if we do call on them, it is needless to dwell on the military loss we shall sustain if, as a class, they show an undue and preventable degree of physical impairment. Regardless of possible need for soldiers, and holding closely to President Wilson's diagnosis of a nation at war, it is a military obligation to reduce to the lowest figure the proportion of unfit in the population. Such efforts, however, must be governed by a due sense of proportion. The one great need of the hour is to place five million able-bodied fighting men in the field. These we must secure as quickly as possible, and no instinct for social reform or health conservation should swerve us from this central purpose. We must not halt in the work of mobilizing able-bodied men in order to make men able bodied. Mark this, I do not say we are not to make men able bodied and fit, but that we must not halt or embarrass the organization that is forming the Army, in order to force our quota of five million from a particular group in the population. Let us enter the higher age groups if necessary, but let us proceed swiftly to secure and equip the men. Fortunately, much can be done and is being done to reclaim physically those who are not fit at the time of the examination.

To a certain extent, the new selective service regulations will reduce the number discharged for physical reasons, as many types of impairments will be ignored and the registrant accepted for sedentary work. While at such work the registrant will be under medical supervision, and it is probable that some of these types will be improved and will qualify for field service. Also, it is planned to instruct the registrant discharged for physical reasons regarding his patriotic duty, and urge him to improve his physical condition for such service as he may be able to perform, civil or military. This will be done by means of a pamphlet approved by the medical section of the Council of National Defense and issued by the Provost Marshal General to the local boards, each rejected registrant to receive one. Such information widely disseminated throughout the homes in the land will reach those in the higher age groups, and not only inform them as to their needs, but also sound the note of patriotic service that is peculiarly needed to offset the apathy of the rejected. The man who has a remediable defect and hides behind it is really a slacker, although he may not be conscious of it. He needs to be enlightened, and the attitude of the community toward him should be the same as toward the slacker of the first class, as he is surely a slacker of the second class. I have hoped and yet believe that well organized and systematic measures will be taken to reach the rejected man and assist him to correct his defects after his rejection, as even physical disabilities do not relieve him absolutely, and he is liable to be recalled and reexamined.

He should try to make himself fit. Let him consult his family physician or any physician; and if he does not receive cooperation, let him apply to the nearest hospital, dispensary or the local council of defense, as any citizen is privileged to do who has military assistance to offer. The chief objection to extensive surgical work of this description by the Army Medical Corps is the burden it would lay on the military establishment, struggling in the throes of organizing from the civil profession a trained and efficient body of Army surgeons. Such work might be accomplished in civil hospitals, and the cost defrayed by the War Department when the hospitals require it, although many hospitals are doing such work without charge. The reconstruction hospitals now in process of organization with their trained staff in readiness to receive the wounded soldiers who need to be reconstructed could be used for a time perhaps as reclamation centers for the physically unfit registrants who need operation. It must be remembered, however, that the majority of these men were not declined because of surgical defects; they need physical training and hygiene and proper diet. I do not say that if the war is prolonged for several years it might not be necessary or advisable to adopt some extensive reclamation system in the Army Medical Corps; but it seems probable that sufficient men can be secured for the field from available classes, and that the wiser method is to save what we can by the general cooperation and coordination of civil agencies in assisting registrants that are not sent to the cantonments to qualify for the best service they can perform.

There should be a center of information in each community to which the registrant can turn for information and guidance as to channels of relief. Physicians, dentists, hospitals, the United States Public Health Service, and health departments all stand ready to render some form of relief without charge to those of moderate means. The man who can pay to have himself made fit should do so. What is needed is an organized machinery to bring the registrant to the source of relief.

Many have doubted that much could be accomplished in this class until a law is passed making reclamation by medical treatment or operation compulsory. This is repugnant to our ideals of personal liberty, and yet it is not as chimerical a plan as many would suppose.

PHYSICAL REFORM

The enlisted soldier is subject to court martial if he refuses an operation that would make him fit for service. The registrant is really in the service; and once at the cantonment or reconstruction hospital, the majority needing operation would no doubt consent, which, I understand, is the case in England.

Entirely apart from the actual reclamation of registrants, an immense stimulus can be given to the movement for physical reform, for higher ideals of health and hygiene. The intense interest in the findings of the draft examinations can be utilized to arouse the people to a sense of their need. Can there be any doubt, with these figures facing us, of the need for child hygiene, for better government of the hygiene of the young, of the tremendous importance of universal military and physical training, of standardized periodic physical examination? Are we going to wait another fifty or a hundred years for another world devastating war before we again have a physical try-out of our young men? Let us move swiftly to correct the evils that the war has revealed with pitiless verity. Like a soft and pampered athlete out of training, this nation goes to war. Only the exhaustion of our enemy and the devoted sacrifices of our allies put us on anything like an equality with our trained and prepared antagonist. Only our immense population with its nucleus of stalwart and eager fighting men saves us from a shameful exhibition of inferiority in equipment to maintain our civilization and our ideals of government.

Let us remember that 60 per cent. of this substandard condition is preventable; that 30 per cent. is due to poor general physical condition remediable by proper nutrition and physical training and personal hygiene; that 30 per cent. is due to defective eyes and bad mouth conditions, and that 10 per cent. is due to neglected surgery.

This is no time for ridiculous national self-sufficiency. There is real work to do; and the reactionary, the standpatter, the man who thinks everything is as it should be, is as dangerous as an alien enemy. Let us face the truth and then cheerfully and bravely assume the work of making up for lost time. It is contemplated to give a standard lecture on this subject, crystallizing the lessons from this try-out of the nation and carrying a strong message to the people, such a lecture to be delivered simultaneously in each county and important town in the country and published through the country in all newspapers. A clarion call should be made to better health ideals and to a stronger and more virile race, to a manhood and womanhood of the future that shall have to show, as a by-product of this frightful war, ideals and standards of living that shall make future wars impossible because of a wholesome and really human civilization completely prepared against war.

THE PREDISPOSING FACTORS OF WAR PSYCHONEUROSES

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INTRODUCTORY NOTE

A brief summary of the reports of eight medical officers, detailed for study in special shell shock hospitals in England during the summer and fall of 1917, may be of interest in connection with the paper of Captain Wolfsohn.

These officers have been given every opportunity by the officers of the Royal Army Medical Corps in charge to make complete studies and observations in the special hospitals in both England and Scotland.

The types that they have observed, grouped under the general term of shell shock, represent many different conditions. Probably the most frequent of these has been the hysterical types. Functional monoplegias, hemiplegias, dancing gaits, tics, mutism, functional deafness and blindness, choreiform movements, tremors, etc., have been very prevalent. The officers likewise have observed psychasthenic cases, such as obsessions, states of anxiety and fear of high places, and patients suffering from frightful nightmares and dreams. The more purely neurasthenic reactions on a basis of exhaustion after long and fatiguing service

are observed, but appear to be relatively infrequent. True shell shock cases, so called, in which some obscure organic disorder is suspected, are likewise infrequent, and as yet their clinical entity has not been very clearly established. Other conditions, such as epilepsy, including petit mal, are not infrequent, and the epileptic types are regarded as particularly unfavorable. Mental deficiency is observed, but insanity is comparatively rare, at least in these institutions.

In respect to etiology, these observers lay much stress on constitutional predisposition; such patients very often have a family history of nervous and mental disease, as well as a past history of neurotic symptoms of some form or other. The immediate existing causes are often of minor significance. It is true that, in many instances, there is a history of the soldier being buried or "blown up," but others have only minor wounds, which could in no way be related to the neurosis. Again, other cases developed in the interior in men who had not been near the front.

A perusal of these reports shows that in England no very well defined method of treatment has as yet been agreed on. Numerous procedures have been instituted, all offering considerable promise, but none of which have been fully satisfactory. The questions of discharge from the service and of pensions, and of special detail with labor battalions, have complicated an already difficult problem.

The forms of treatment have undergone considerable change with added experience. At first it was advised that these patients be sent from the evacuation hospitals in France to the special hospitals in England as soon as possible. There was much in favor of this recommendation, because many nervous patients were allowed to remain in general base hospitals without special treatment. Some such patients did not get back to the special hospitals for six months or a year, or even longer.

The treatment at the special hospitals has consisted of such general measures as massage, baths, special diet, and rest associated with diversional occupations, namely, carpentry, gardening and basket work. Special psychic therapy has been given, consisting of persuasion, suggestion to a considerable degree, and psychanalysis to a slight extent. Hypnotism, at first used to a limited extent, has been entirely disapproved. Particular efforts were made to protect the men from excitement of any kind, and various forms of entertainment were offered.

This general method of procedure has not been so successful as could be desired. The unavoidable delay in reaching the special hospitals in England allowed the symptoms to become fixed. Moreover, a number of patients, returned as cured, promptly relapsed, even before they reached the line. Under these circumstances, the medical officers entertained doubts as to the wisdom of returning to the front patients that had ever suffered from shell shock.

Quite recently the attitude in respect to the management of this condition has undergone a marked change. Eighty-five per cent. of all shell shock patients are not now returned to England at all. It has been found much better to treat them nearer the front, and any release from military discipline is regarded as unfavorable for recovery. Moreover, the general methods of treatment, such as diversional occupation, extra diet and entertainments, have been replaced by more rapid and much more satisfactory procedures. Electricity given for psychic effect, which at first was disapproved, has been found to be a valuable agent. This is accompanied by strong persuasion. Cases are reported cured in this way in a few hours which had formerly endured for months, and had resisted all other methods. The personality of the medical officer is a most important factor.

It would appear, therefore, that the experience in England has substantiated what has been observed in similar cases in France, namely, that such patients should be kept under strict military regimen. They should not be sent to the interior. Suggestive measures properly applied and accompanied by electricity for its psychic effect are successful. Delay in the treatment allows the fixation of the neurosis, and once a soldier has reached the interior because of shell shock, it is very difficult to utilize his services again.

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Throughout the massive literature that has sprung up within the past three years, one reads passing references mostly to the relation of the symptoms of war psychoneuroses to a previous neuropotentially unsound soldier. Most authors have elicited an inherited or acquired neuropathy in the majority of their patients afflicted with shell shock, neurasthenia or any of the neuroses resulting from the strain of the war, but enough actual specific data on the inherited and acquired neurotic factors in these cases have not been published.

To Major F. W. Mott, R. A. M. C. (T.), I wish at this time to express my sincere thanks for suggesting this investigation, for his kindly advice, and for free access to his wards at the Maudsley Hospital.

In previous publications, Mott has laid considerable stress on the former temperament in soldiers suffering from war neuroses. He writes:

> A large majority of shell shock cases occur in persons with a nervous temperament, or persons who were the victims of an acquired, or inherited, neuropathy: also a neuropotentially sound soldier in this trench warfare, may, from stress of prolonged active service, acquire a neurasthenic condition. If in a soldier there is an inborn timidity or neuropathic disposition, or an inborn germinal or acquired neuropathic or psychopathic taint causing a *locus minoris resistentiae*, it necessarily follows that he will be less able to withstand the terrifying effects of shell fire and the stress of trench warfare.

Pierre Marie, Carcot, Nonne and others have come to similar conclusions. Thus, in order to evaluate properly the effects of environment on an individual, either in peace time or during the war, it is necessary to study the forces inherent in that individual.

Before drawing general conclusions on this subject, one should try to answer some of the following pertinent questions:

1. Of what kind of forebears is the patient a representative?
2. What is the personal temperament of the patient?
3. What was his former calling, and how has he shouldered his responsibilities during active war service?
4. Do acquired war psychoneuroses occur, and what are the causes thereof?
5. What is the relation of the last "shock" to the production of the war neurosis?
6. Why do not all soldiers suffer from war neurosis?

Before answering any of these questions, one must examine all available data up to the time of active service, and also the actual causes and circumstances exciting the outbreak of the neurosis, realizing that every individual's nervous system will react according to his inherited tendencies superimposed on the effects produced by environment. The object of this paper, therefore, is to make an intensive study of the causal factors of war neuroses as presented by the family and the personal histories (up to the time of, and including the cause of, disablement) in 100 cases of war psychoneurosis, namely, shell shock, neurasthenia, hysteria and exhaustion. Insane cases are not included.

As a control, 100 cases of somatic injuries produced on the firing line, namely, enucleation of an eye, fracture of the skull, jaw, and femur amputations, and wounds with or without sepsis have been similarly studied.

The exhaustive history in most of the cases was given by the patient himself. In some cases the help of the wife or mother was necessary in order to get as many first hand available data as possible.

FAMILY HISTORY

Table 1 shows that, in the neurosis group, insanity occurred in the family in 34 per cent.; epilepsy, in 30 per cent.; stigmata of degeneration, as onychophagy, adherent ear lobules, high arched palate, etc., in 10 per cent. This is in marked contrast with the entire absence of insanity, stigmata and epilepsy in that of the control group. Likewise, nervousness, as evidenced by a history of phobias of various kinds, insomnia, superstitions, "nerves," or hysterics, is present in 64 per cent., and irritability of temper in 36 per cent. of the neurotics' forbears, while these are only present in 15 and 12 per cent. in those of the controls, respectively.

TABLE 1.—FAMILY HISTORY

	Neurosis, Per Cent.	Wounded, Per Cent.
Nervousness	64	15
Alcoholism (parents and grandparents)	50	24
Teetotaler (parents and grandparents)	30	16
Irritability of temper	36	12
Insanity	34	0
Epilepsy	30	0
Tuberculosis (immediate family)	12	4
Tuberculosis (relatives)	6	4
Stigmata	10	0
Positive history for one or several of foregoing	74	38

The question of alcoholism is interesting, as there was a history of excessive use of alcohol in 50 per cent., and of total abstinence in 30 per cent. of the parents or grandparents of the neuropaths. Alcoholic excess was found in 24 per cent., and abstinence in only 16 per cent. of the controls.

From Stockard's experiments we know the deleterious effects of chronic alcoholism on the germ plasm. Can we not conclude that it is very significant to have 50 per cent. of our neurotics with alcoholic forebears, while only 24 per cent. of the controls were so affected? Another interesting fact brought out is that most of the teetotalers were found in fathers of neurotic patients whose grandfathers or uncles suffered from alcoholism, the abstinence of the father representing the opposite extreme. This will be again dealt with in the personal history of the patient. The teetotalers usually possessed some nervous traits, such as nervousness or irritability of temper.

The lesson learned from these figures is that, so far as the family history of patients suffering from war psychoneurosis is concerned, certain factors are much more in evidence than in the control series.

If, as White says, "in epilepsy there is a lack of some factor in the germ plasm," we have a direct cause for faulty inheritance, which, as well contrasted above, is found to be lacking in the control cases, and assumes the large total of 34 per cent. in the neurotic group. The presence of insanity also shows almost the same disproportion as epilepsy, and bears out what Mott has shown in his former reports on the incidence of insanity in families. It is interesting to note that this author, in his report to the Board of Control, London, 1915, lays stress on the fact that "it is common in insanity and mental deficiency to have lack of mental control leading to indulgence in alcohol." Many of the insane patients of this group suffered from periodic excesses of alcoholism.

At this point, it might be well to give an example of hereditary traits in a case of shell shock, following burial:

Case 1.—A. V., aged 37, shoemaker, was partially buried by the detonation of a high-explosive shell; short loss of consciousness followed, and later he became stupid, shaky and weak. He had terrifying dreams, was very fearful of the dark, and twice attacked his companions with murderous intent while in a dazed state. He had no recollection of these attacks. He had always possessed a violent temper, the outbursts usually being followed by attacks of petit mal. He was always afraid of the dark. The patient is married; one child has "fits"; three others are hysterical, and have fits of impulsive temper. The patient's father, brother and sister are now in a hospital for the insane. Three other brothers are very irritable; one has convulsions; three sisters are very "nervy." One other sister is an exceptional musician. His paternal grandfather was very excitable, and died in a "passion of temper." An uncle was a rebel leader, very excitable and brilliant, and had a child with an intolerable temper and another with "St. Vitus' dance." Another uncle was a rogue and a crook, and his son was a crook. A normal aunt has six children, one of whom is insane and five very excitable. His great grandfather had an intolerable temper and died in a hospital for the insane. One great uncle, with an intolerable temper, had an insane son. Another aunt by her own brother had three children, one of whom became a prostitute and the other two were imbeciles.

Another history showing the excessive use of alcohol is instructive:

Case 2.—Corporal V., aged 34, suffering from shell shock, had been in active service two months when he was blown into the air by the detonation of a high-explosive shell. He was unconscious for twelve hours, after which time he was dazed, and suffered from marked tremor of the limbs, stuttering, frightful dreams and insomnia. His father was a psychasthenic and drunkard; his mother was alcoholic, and finally committed suicide in a fit of depression. One brother had a "mental collapse"; another had "fits." One sister is a psychasthenic now, and two other sisters are nervous. One maternal cousin is an imbecile. The patient himself drinks to excess.

These two of many similar histories bring out the familial traits and degeneracies, and need no further comment.

Onychopagy as a stigma of a neurotic disposition was present in 10 per cent. of the neurotics' families, and was lacking in that of the controls. Finally, a positive family history was obtained in 74 per cent. of the neurotics and in only 30 per cent. of the controls.

PERSONAL HISTORY

Taking up now the personal history of our patients, previous to enlistment, a cursory glance at Table 2 will

show that in all the characteristics named, except occasional alcoholic excesses, the percentage of neurotics always exceeded the control. It will be noted that 38 per cent. of the neurotics gave histories of previous injury to the head. In not one case was there injury severe enough to cause unconsciousness. Usually the patients "saw stars" and were momentarily dazed only; no cases of known fracture of the skull occurred. This is true also of the 12 per cent. head injuries in the controls.

A preponderating percentage, 66 against 12, occurred in favor of the neurotics, who suffered from previous

TABLE 2.—PERSONAL HISTORY

	Neurosis, Per Cent.	Wounded, Per Cent.
Stigmata	34	4
Previous nervousness	66	12
Fears	50	8
Head injury	38	12
Epilepsy	8	0
Tobacco (excessive)	8	4
Alcohol (excessive)	6	16
Alcohol (teetotaler)	48	20
Married	42	28
Moody	55	8
Previous breakdown	2	0
Enuresis	12	4
Frights in childhood	4	0
Excessive religion	6	0
Positive personal history	76	12
Positive family and personal history	70	6
Recurrences and relapses	14	0
Acquired neurosis	12	3

nervousness manifested by irritability, easy blushing, timorous, hypersensitive disposition, inclined to worry about small things. Fifty per cent. as contrasted with 8 per cent. of the controls had fears of heights, dark open places, traffic, etc. Forty-eight per cent. were teetolars, compared with 20 per cent. of the controls, whereas the latter were more apt to imbibe liquor too freely at times. No cases of chronic alcoholism occurred in either group.

The neurotic patient was usually moody (55 per cent.), liked to be by himself, did not mix well with his comrades and was either very happy or depressed. Eight per cent. of the controls who showed previous depression of spirits also showed in their present examination mild neurasthenic signs, such as fine rapid tremor of the fingers and lids, hyperactive reflexes and cold, clammy hands, or hysterical manifestations in the affected limbs. Frights in childhood were recalled in only 4 per cent. of our neurotics, but in none of the controls. The former have a tendency to be excessively religious (6 per cent.), and this religiosity was found in every case among the teetotalers. Enuresis occurred in 12 per cent. of the neurotics and 4 per cent. of the controls. An example or two typifying these characteristics might not be out of place:

CASE 3.—F. S., aged 24, a constitutional psychopath, suffering from shell shock, had been in active service for seven months. A high explosive shell had detonated near by. He was unconscious for three days, was dazed, and had retrograde amnesia, much insomnia and bad dreams. The chief symptoms and signs found were excessive fatigue, depression, suicidal tendencies, physical manifestation of fear, wide eyelids, tachycardia, clammy hands and increased reflexes. The father was a teetotaler and nervous. His mother was a suicide. The patient was always moody, depressed and antisocial. He had suicidal tendencies.

CASE 4.—J. K., aged 25, a constitutional psychoneuropathic, suffering from shell shock, had been in active service one month. Aug. 17, 1917, a high-explosive shell had burst near by, badly dazing the patient. He had amnesia for several days following, terrifying dreams, much general tremor, and had occipital and frontal headache. He remained in one place, very sad and morose. There were physical manifestations of fear but no somatic injury. The father used alcohol to excess; one sister was insane and two sisters were nervous. He never did well at school: he could not learn; he bit his nails until 14 years of age. He was always of a timorous nature, nervous and fearful. He smoked excessively and was a staunch teetotaler. He had many attacks of "melancholia," and always liked to be alone; he suffered much from depression, and was asocial; he practiced masturbation.

Many similar histories could be recounted here, but these two examples will demonstrate on what data this series is built. Contrast this with the following history of a control patient:

CASE 5.—L. G., aged 27, who had a compound fracture of the tibia and fibula, had been in active service twenty-three months. In 1915 he was wounded by shell fire, and returned to active service in two months. In August, 1917, he was struck by a piece of shrapnel which fractured his tibia and fibula, after which he crawled 900 yards for help. He had no tremors: memory and concentration were good; he had no fears, no insomnia, and only occasional dreams; he was very cheerful, and showed no signs of nervousness. The family history was negative throughout. The personal history was negative throughout. The patient was always cheerful, experienced no fears, and drank moderately of liquor. He had never previously been nervous or timorous.

This case is a fair example of over 88 per cent. of the control histories. It needs no further comment.

PRESENT ILLNESS

The neuroses in this series are grouped under the general term "war psychoneuroses," as being applicable to all the functional cases encountered. In no case was there found a somatic wound in the neurotic group. The history generally obtained was the bursting of a shell near the patient, who was knocked over, buried, or just dazed — with the symptoms of neurosis following, as shown in Table 3. It will be seen that in a soldier who was excessively fatigued, as a great many are, at the moment of the disability, or who had been under undue mental anxiety during days and nights of trench duty, expecting at any time to be blown

TABLE 3.—PRESENT ILLNESS

	Neurosis, Per Cent.	Wounded, Per Cent.
Service	12 months	10 months
Unconsciousness	55	24
Dazed	84	24
Tremor	84	12
Poor memory	88	4
Poor concentration	88	4
Insomnia	86	0
Fears	76	0
Dreams	88	50
Fatigue	94	40
Headache	88	36
Moody	92	0
Vertigo	74	8
Fits	10	0

to pieces, emotion must play an important part in the great nervous strain, which nears the collapsing point. Sometimes merely the sight of carnage or of companions killed around him, or the shrieks and groans of the wounded, is sufficient to bring about the termination of his nervous or mental control, and the patient is brought back with the typical neurasthenia or psychoneurosis due to war strain. With this affliction, a soldier need not even have been to the front, as merely anticipation and apprehensive fear might have been the exciting factors of the psychic or neurotic manifestation. Or if the shell burst near his right side and knocked him over, he suddenly develops right-ear deafness, or paralysis of the right arm or leg

(and this paralysis is almost universally located on the side nearest the explosion); or the patient even loses his voice suddenly, a typical hysterical paralysis, which can as suddenly be cured as produced; but when commotio cerebri is added, sustained as a result of concussion, unconsciousness immediately or soon may follow, with its accompanying amnesia. In the greater number of cases, emotionalism is accompanied by an exaggeration of all the symptoms.

Where the emotional factor is paramount, there is generally found weakness of the will, hypersuggestibility, anxious tension and apprehension as the mildest complex in the series of functional disturbances of increasing gravity (neurasthenia), which culminate in cases of severe nervous symptoms (shell shock). Many combinations of neurasthenia, hysteria and shell shock have necessarily been encountered. This shows strikingly the great difference in the presence of certain symptoms; for example, early fatigue and lassitude in 94 per cent. of the one and only 40 per cent. of the other. In the controls, it might be added that this symptom was here not altogether due to excessive nerve tension and apprehension, which is the basis of the neuroses, but from loss of blood and the necessarily prolonged rest in bed. The controls do not look nervous, nor do they possess the cold, clammy, tremulous hands of the neurotic. Not a single case of insomnia or of depression of spirits occurred in the controls, while among the neurotic cases 86 per cent. were sufferers from insomnia, and 90 per cent. were depressed.

The usual story of the neurotic is the great difficulty in going to sleep (the brain seems in a whirl, etc.), and when sleep is finally attained, it is fitful. He often wakes trembling, with a smothering sensation in his throat and covered with a cold sweat. Somnambulism is not uncommon. Often the patient is afraid to go to sleep, because he knows he is going to have frightful dreams: this occurred in 88 per cent. of the series. Headache (frontal, occipital, temporal and vertical) was found in 88 per cent. of the neurotics and 36 per cent. of the controls (most often following organic head injuries). Vertigo was found in 74 per cent., as against 8 per cent. of the controls. Fears of traffic, heights, crowds, etc., were found in 76 per cent., and not once in the controls. Tremor was found in 84 per cent., as against 12 per cent. A prolonged, dazed period followed the explosion in 84 per cent. of the neurotics, and in only 24 per cent. of the controls. Poor memory and lack of concentration were most common (88 per cent.), and were noticeably lacking (4 per cent.) in the controls. Nervousness followed injuries in 24 per cent., but this was not as much psychic as from real trauma, such as fracture of the skull, enucleation of the eye, amputation of a leg, etc. Moreover, on awakening, these patients did not have the neurotic manifestations, as stuttering, tremors, fits and hysteria, that 55 per cent. of the neurotics showed who suffered unconsciousness. Three cases of hysteric monoplegia in soldiers with wounded arms and legs occurred in the control group.

The symptoms of the neurosis in most cases have had a very gradual onset, with the explosion coming as the final shock. In these cases, the patient was "nervy" for some time before the accident, and suffered from easy fatigue, frightful dreams and loss of self-confidence.

In some soldiers the neurosis was most probably the result of an excessive and protracted nervous strain, coupled with exhaustion. The following is an example of an acquired neurasthenic state in a soldier with a negative family and previous history:

CASE 6.—J. P., aged 21, suffering from neurasthenia following nervous exhaustion, had been serving eleven months without rest on the Ypres salient. For several weeks before disablement he was getting "nervy," complaining of easy fatigue, lassitude, pains in the head, and of being easily startled. For several days he was in the front line trenches and was very tired, when a shell burst near by and knocked him over. He was not unconscious, but for one week was quite dazed, shaking all over and stuttering. He suffered with excessive fatigue, occipital headache, marked vertigo on bending or standing, and many frightful dreams; he waked in a fright, feared traffic and the dark, and was depressed; his memory was only fair, and his mind wandered much. The family history was negative. The patient's history previous to enlistment was negative; he had never been nervous in his life.

These soldiers, like so many others who had normal forebears, and whose personal histories presented good credentials as to nervous make-up, can undergo just so much tension, when, by exhaustion, long continued exposure to wet and cold, and the continual nervous strain of an active campaign, the final crash comes in the form of a detonation from a near by high-explosive shell, which knocks them over or buries them. Ten per cent. of the neurotic group had acquired the neurosis from which they were suffering.

The nervously unfit do not stand so much wear and tear as the average example mentioned above. Some of these neurotics suffer from the same symptoms even before actually going to the front: in this case it is rather apprehension and fear than physical exhaustion that produces the final result. The question of relapses and nervousness in war neurosis is important: Fourteen per cent. of the neurotic group were instances of recurrence or relapse of the neurosis.

One patient, who came from a highly strung Jewish family, and who claimed "excellent nerves" himself, entered the hospital with typical shell shock following burial by a high-explosive shell. He was aphonic and had a general coarse tremor of his limbs and head. In three weeks he was much improved, his voice returned, and his tremor had almost disappeared. He was permitted to view a cinema which showed an aeroplane in action. As it seemed to fly near and to grow large, a bomb was dropped, and as it landed, in order to make the scene more real, a drummer in the orchestra hit a resounding peal on the bass drum, and our patient, taken unawares, promptly became aphonic, darted out of the theater in a dazed condition, and was brought back to the hospital in a worse neurotic state than in his first attack. This relapse lasted thirty-six hours.

One has just to visit the wards the day after an air raid or even a thunder storm, to see most of the neurotic patients trembling, nervous and headachy; a few even become aphonic. In marked contrast, the patients in the surgical wards, who rarely suffer from neuroses, are none the worse for this experience; in fact, some of them even go so far as to wish that they could have gone out to view it.

Case 7 presents an interesting case of recurrent shell shock:

CASE 7.—G. A., aged 23, had seen ten months' active service in France. Dec. 19, 1915, he was buried by a shell, was unconscious, and later suffered from nervousness and stuttering, depression, insomnia, frightful dreams and tremor. He rapidly improved under treatment, and was returned to

the front within a month. Later, a shell burst near him, and again he was dazed and trembled, and had lapses of memory and general nervousness. Again he was treated in the hospital, with mitigation of his symptoms, and again returned to the front, where, in a few days, he saw a bomb burst some distance away. He immediately began to stammer and to wander about aimlessly. He suffered with marked insomnia, tremor of the legs, arms and head; easy fatigue, continual lassitude, occipital and vertical headaches, and fear of aircraft, crowds, etc.; and frightful dreams kept the patient in constant terror and to a great extent caused the insomnia. Frequent lapsus mentis and aimless wanderings occurred, and also one attack of deaf-mutism. He runs now when he sees aircraft, and is easily startled by noises, with marked fear reaction. The father was an alcoholic addict, very nervous and excitable. The mother was always nervous, and had a bad temper. One sister has nervous prostration. The patient was always more or less moody and was an onychophagist.

This case, like most similar ones, shows not only that the patient, once a sufferer from a severe neurosis, is neuropotentially much weaker than before, but also that each subsequent "shock" need not have the same severity to produce a serious relapse of all the patient's former symptoms. As one patient so aptly said, "I seem to have lost my come back."

From a study of a large number of war neuroses, one comes to the conclusion that the intensity of the "shock" is not measured in terms of trauma, but of individual sensitiveness. This is most beautifully seen in the controls who have suffered most serious somatic traumas, but who showed none of the neurotic symptoms found even in the mildest cases of war neurosis.

CONCLUSIONS

This study of 100 cases of war psychoneuroses and 100 cases of somatic injuries produced on the firing line reveals that:

Cases of war neurosis are very rarely associated with external or somatic wounds. The vast majority of the psychoneurotic cases studied were among soldiers who had a neuropathic or psychopathic soil. In 74 per cent. of these cases a family history of neurotic or psychotic stigmata, including insanity, epilepsy, alcoholism and nervousness, was obtained, while a previous neuropathic constitution in the patient himself was present in 72 per cent.

A gradual psychic shock from long continued fear, together with the sudden change from quiet, peaceful environment to the extraordinary stress and strain of trench fighting, is the chief predisposing cause of war psychoneurosis in soldiers with neuropathic predisposition. In fact, these factors may be the cause of the neurosis per se.

The history of the individual previous to enlistment has an influence on the character and gravity of the symptoms of the neurosis.

Acquired neuroses, with their less severe symptoms, appeared only after excessive fatigue, with the concussion from the high-explosive detonation acting as the exciting factor. On the other hand, in the same abnormal environment, and with the same powerful factors obtaining, wounded soldiers do not suffer from war neuroses except in rare instances. In the wounded soldiers studied, no neuropathic or psychopathic stigmata occurred in the family history.

Previous neuropathic tendencies were found in 10 per cent. of these patients (controls), all of which number presented mild neurasthenic tendencies.

Hysteric manifestations, such as monoplegia in a wounded limb, are occasionally encountered in injured soldiers.

CORRECTABLE DEFECTS AND TUBERCULOSIS IN DRAFTED MEN

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The physical examinations in connection with the selective draft revealed many thousands of cases of early tuberculosis, not previously recognized, and a large number of other correctable defects. The purpose of the examinations was to exclude from the Army all men physically unfit for military service.

The knowledge gained was of a sort to make possible the early treatment and control of a vast number of cases of tuberculosis, and the correction of many disabling physical defects of other sorts. Here was a chance to give to the men rejected for the causes mentioned opportunity to remove their handicaps and to become eligible for the fighting army or more efficient in the industrial army.

TUBERCULOSIS REPORT CARD

The State Law Requires You to Report All Cases of Tuberculosis

A CALIFORNIA STATE BOARD OF HEALTH

BUREAU OF TUBERCULOSIS

Sacramento, California

Report of a Case of Suspected or Known Tuberculosis

Name of person examined.....

Street and number.....

City or town.....

Type of disease {suspected / known} tuberculosis of lungs, larynx, lymph glands, peritoneum, bones, intestines, meninges, skin.....

Stage of disease: Early, moderate, advanced. (Cross out words which do not apply.)

Place of examination.....

Date of examination.....

.....
Examining surgeon

I request a thorough examination by a tuberculosis expert and advice about the need for treatment and opportunities for receiving it.

.....
Person examined

The signer of the request will be notified when and where to report for examination.

In the absence of a national plan, the California State Board of Health attempted, in the short time available, to organize a system of follow-up examinations, treatment, and supervision for the men rejected during the first draft for tuberculosis and correctable defects. The experience of the board is given here in the hope that it may be of some value to those who will make the better and more comprehensive plans for reclaiming rejected conscripts or discharged soldiers in the future.

The approval of the state board of registration was first obtained for the plan formulated. Then Adjutant-General J. J. Borree, acting under the direction of Governor Stephens, sent a letter to all examining physicians of local exemption boards calling their attention to the fact that the state law required the reporting of tuberculosis to the health authorities. They were instructed to send reports of all cases of tuberculosis and of correctable defects to the state board of health on the very brief forms supplied. The state board of health furnished two forms for the purpose, one for tuberculosis and one for correctable defects, and also

supplied stamped and addressed envelops. The tuberculosis report card, Card A, is reproduced herewith. The report card for correctable defects, Card B, was similar in general arrangement, and was headed, "Report of a Person Refused Admission to the Army or Navy Because of a Correctable Defect."

A volunteer staff on correctable defects and a volunteer staff of tuberculosis examiners were next organized. The members of the staffs were appointed by the state board of health, but received no salary. Their duties were thus set forth in the letters of appointment:

The duties of the members of the staff on Correctable Defects will be:

1. To make a thorough examination of each person sent to him.

2. To determine whether his defect could be easily corrected.

3. If the defect can easily be corrected, to make the correction without charge for service, or to arrange for the correction elsewhere, or to give appropriate advice about securing proper treatment independently, according to the circumstances of the case. When hospital care is necessary, or when dental materials must be used, the man receiving the treatment can appropriately be required to pay for them, but he should understand this in advance of his treatment. When the man is unable to pay necessary expenses incidental to his treatment, an attempt should be made to interest public-spirited individuals or institutions in securing the necessary funds. In such cases hospitals can appropriately be requested to give special rates. In some instances they may have public funds which are available for the expenses of these patients.

4. To report to the state board of health, on the card furnished, such data as may be required, including the nature of the defect, the advice and treatment given, and the results, together with recommendations to the state board of health relative to further treatment or supervision.

The duties of the tuberculosis examiner will be:

1. To make a thorough examination of the persons sent to him.

2. To advise the patient regarding his condition, the need for any special care or treatment, the precautions against spreading the disease, and the opportunities for obtaining supervision, care and treatment. In order to give the needed advice to those who require assistance, it will be necessary for the examiner to ascertain in advance what public provisions have been made for home or sanatorium care in his part of the state.

3. To report the cases to the state board of health by forwarding the official data cards properly filled out.

4. To enter on the card which will be sent for each patient such data as will be required, including a brief statement of presence or absence of tuberculosis, its extent and location, the advice given the patient, and any recommendations to the state board of health regarding the "follow-up" of the case.

It was stipulated that no compensation was to be received from the patient for the services outlined.

As the report cards were received by the state board of health, they were segregated geographically, and form letters were sent to the men who had signed the request for further examination and advice. In this way, appointments were made for the men with the appropriate specialists on the staffs. Many of the failures to report for these appointments can be explained by the considerable travel and loss of time which would be necessitated by a trip to the specialists, as few of them were located outside the larger cities.

Whenever an appointment was made between a rejected man and a physician, a card was sent to the physician notifying him of the appointment, giving the reason for referring the man to him, and providing space for his report to the board on the essential data of the case. If the man did not report within fourteen days after the date of his appointment, that fact was to be noted on the record, and the card returned.

RESULTS OF THE WORK

	Number
Reports of correctable defects from exemption boards	1,348
Reports of tuberculosis from exemption boards	1,313
Reports of tuberculosis from army camps up to Jan. 4, 1918	1,110
Total reports	3,771

CORRECTABLE DEFECTS

Cards bearing request for examination and advice	1,129
Cards without signed request	219
Total reports for correctable defects	1,348
Correctable causes for rejection as reported by examining physicians:	
Defects of vision	89
Defects of hearing	137
Defects of teeth	22
Defects of nose and throat	38
Defects of heart	20
Appendicitis	5
Other defects of digestive tract	3
Displacements of abdominal organs	2
Hernia	563
Hemorrhoids	53
Fistula	19
Typhoid fever, dysentery	3
Syphilis	30
Gonorrhea	36
Varicocele, hydrocele	83
Disease of the kidneys	2
Other defects of genito-urinary tract	13
Diseases of the skin	9
Varicose veins	31
Tumors and cysts	4
Abscesses and sinuses	4
Deformities	69
Defective feet	52
Underweight	45
Bursitis	3
Partial paralysis	2
Unclassified	8
Defect not specified	3
Total	1,348
Number reporting for examination:	
Men who reported for examination	319
Men who failed to report	594
Letters to men returned unclaimed	24
Men not referred, because of no local staff	147
Men referred, but no final report from staff	45
Total number of men requesting examination	1,129
Disposal of cases:	
Men advised and treated by staff	78
Men advised and referred to other physicians	13
Men advised who declined treatment	83
Men reported under care of private physicians	26
Men advised but not offered treatment because they claimed exemption on other grounds than their physical condition	32
Defects as reported by exemption board physician not confirmed	3
Men reported as not unfitted for Army service by defects	13
Defects reported by staff as not correctable	16
Men not in position to accept treatment at present	34
Men reporting to office of board in person or by letter	21
Total	319

TUBERCULOSIS

Reports of tuberculous men rejected by exemption boards	1,313
Cards bearing request for examination and advice	1,152
Cards without signed request	161
Reports of tuberculous men discharged from Army camps up to Jan. 4, 1918	1,110
Total reports for tuberculosis	2,423

MEN REJECTED AT TIME OF DRAFT

Number reporting for examination:	
Men who reported to staff for examination and advice	420
Men investigated and advised by tuberculosis nurses	142
Men who failed to report and not seen by nurses	457
Men who had left the state before notification	25
Letters to men returned unclaimed	42
Address of men not given on report card	3
Men not referred because of no local staff	28
Men referred, but no final report as yet from staff	196
Total reports of tuberculous rejected men	1,313
Disposal of cases:	
Men who reported to staff or seen by tuberculosis nurses	562
Men reported as under care of private physicians or sanatoriums	118
Men found by staff not to have tuberculosis	21
Cases investigated by visiting nurses and reported to bureau of tuberculosis	142

MEN DISCHARGED FROM ARMY CAMPS ON PACIFIC COAST

Men belonging to California	514
Men belonging to 41 other states and District of Columbia	596
Total men reported by seven Army posts and the marines up to Jan. 4, 1918	1,110

As soon as this system was well under way, it was decided to extend the tuberculosis work to include the tuberculous men who were not recognized by the examining physician of the local exemption boards, but who were afterward discovered and rejected during the more thorough examination at the camps. It also developed that this follow-up work was needed for men rejected from the National Guard camps. At Camp Lewis in the state of Washington, the medical officers cooperated by reporting the discharged cases in California men. In the California camps, all men discharged or rejected on account of tuberculosis were reported to the board. The bureau of tuberculosis, under the direction of Mrs. E. L. M. Tate-Thompson, in addition to the follow-up work for California men, arranged through correspondence, as far as possible, for the care and supervision of the others in their home states.

The bureau of tuberculosis sent a tuberculosis specialist and a public health nurse into a few communities in which there were no tuberculosis examiners. They held examining clinics for the rejected men. In a number of cities, the duties of the tuberculosis examiners were taken over by the staffs of the clinics of local tuberculosis associations, and the tuberculosis nurses of tuberculosis associations or health departments assisted in the follow-up work. Literature was mailed by the bureau of tuberculosis to all tuberculous rejected men who reported for examination or were seen by the tuberculosis nurses.

To complete the tuberculosis program, there should have been created a tuberculosis camp to which patients with early cases could have been sent and given at least several months of medical supervision and schooling in tuberculosis. As yet such a camp has not been made a reality by either public or private funds. As far as possible the men were brought under the supervision and care of sanatoriums, private physicians, clinics, and the nursing services of health departments.

The results of the work are shown in the accompanying table.

Space will not permit individual mention of the many dentists and physicians who gave their valuable time to this work as tuberculosis examiners or members of the staff on correctable defects, but the complete list is accessible in the January number of the *Monthly Bulletin* of the California State Board of Health.

The staff on correctable defects included six institutions or groups of physicians and seventy-seven additional physicians and dentists. The work for San Francisco and neighboring cities was taken care of by the University of California Medical School, the Leland Stanford Junior University School of Medicine and the University of California Dental School, and was organized by Dr. E. F. Glaser. In Los Angeles, the staff was organized by Dr. Walter V. Brem; in Sacramento, by Dr. F. F. Gundrum; in Stockton, by Dr. William Friedberger and Dr. Linwood Dozier; in Fresno, by Dr. Clifford D. Sweet, and in Chico, by Dr. D. H. Moultin. In San Diego the men were referred to the San Diego Diagnostic Group Clinic, and in Eureka to the Sequoia Hospital staff:

The staff of tuberculosis examiners contained the staffs of eight clinics and forty-three additional physicians. The clinics of the associations for the study and prevention of tuberculosis in San Francisco, Alameda County and Santa Clara County, the Scripps Diagnostic Clinic in San Diego, the Sacramento Settlement Association, and the Sequoia Hospital staff in Eureka took part.

The work in correctable defects in future drafts will in all probability be taken care of by the national plan that is being arranged by the Commitee on States Activities of the Medical Section of the Council of National Defense. It has been proposed that the program be operated through national, state and district committees. Even with this arrangement for taking care of correctable defects, the tuberculosis problem will remain one that will concern primarily the state and local boards of health.

Greater use should be made of the information obtained through the physical examinations of drafted men, for the purpose of lessening tuberculosis and increasing the man-power of the nation.

TRENCH FEVER

The following review of the present knowledge of trench fever is taken from a summary in the *Medical Bulletin*, published by the American Red Cross in Paris, December, 1917, **1**, No. 2, p. 132:

Fever known among the British troops as P. U. O. (pyrexia of undetermined origin) has greatly increased in the British troops in France during the past year. Under this term, which it is admitted is an unfortunate one, have been included through error of diagnosis cases of paratyphoid fever, of influenza, and especially of trench fever.

During the latter part of the year 1915 and in 1916, in northern France, a disease known as trench fever became gradually recognized as a distinct, specific infection. Cases of this disease were also reported from the armies in Saloniki and Mesopotamia, and apparently a similar affection occurred among the German troops. In some of the armies in northern France, trench fever has caused almost one third of all the sickness. In one division during a year, a monthly average of about 350 cases of this affection were sent to field hospitals. Macgregor and Ramsay have given evidence of individuals who have contracted the disease in England. The disease has occurred particularly in France in those who have been in the trenches or among those who have cared for the sick in the hospitals.

Clinical Features.—The incubation period of trench fever as determined experimentally varies from six to twenty-two days. The disease appears particularly in two clinical types, one in which there is a short, evanescent fever lasting from a few days to a week, and frequently followed after a few days of apyrexia by a single short relapse; and a second in which there is a series of relapses of the fever interrupted by periods of apyrexia. In both forms as a rule the onset is sudden and the affection is characterized by headache, dizziness, pain in the back and particulary in the legs, constipation, and a sharp rise of temperature, usually to 102 or 103. Pains in the shins or muscles of the legs is a very common complaint. It is often very distressing, and renders the patient restless at night. The pain in the legs occurs particularly at the points of insertion of the muscles to the bone, where apparently an actual inflammatory process takes place. The pain does not affect the joints. The face is usually flushed, but the eyes are clear and bright. The conjunctivae are not suffused, as in dengue fever. The tongue is usually coated, and there is anorexia. The pulse is usually in the neighborhood of 100, and the heart is normal in the early stages of the disease. Pulmonary catarrh is absent. There is no albuminuria and no enlargement of the spleen. His, and later Zollenkopf, also reported under the name of "Volhynian fever" the occurrence of a somewhat similar disease in the German troops. However, His states that the spleen is almost always enlarged; and Zollenkopf, that it is usually increased in size and that a rash is present. Jungmann concluded that Volhynian fever was a form of typhus.

In the first form mentioned, after about the third to the sixth day of fever, there is often a drop in the temperature, and the temperature remains in the neighborhood of normal for several days. Then a short relapse of fever, lasting only a day or two, takes place. In the second type there may be several attacks of fever lasting three or four days or longer, in which the temperature may reach as high as 104 or 105. Between the attacks of fever there are periods of apyrexia of about the same length of time. The periods of fever and relapse, however, may vary; for example, in three cases reported by Herringham, the fever lasted seven, ten and thirteen days, respectively, and the periods of apyrexia, five, eight, and eleven days. Houston and McCloy have also described what they call a myalgic type in which there is one period of fever lasting from a few days to a week. After this the temperature falls to normal, but the severe pain in the legs continues. Occasionally a sudden rise of the temperature during this period occurs. They have also described a septicemic type in which the enterococcus was isolated from the blood. Other observers have not reported on the septicemic type. Albuminuria has usually been reported as not present. Mandel, however, states that albumin is frequently present, and that in severe cases hyaline and coarsely granular casts and red blood cells are present, the casts frequently persisting after the albumin has disappeared. Possibly these cases are related to "trench nephritis."

The blood shows a slight relative increase in the large and small lymphocytes and a reduction in the hemoglobin. A punctate basophilia of the red blood corpuscles is present.

The prognosis is very good, but the conditioin in the severe form is apt to be followed by a certain amount of debility. The most important sequelae are anemia, which occurs in from 10 to 15 per cent. of the cases, and disordered action of the heart. The latter is very common after the severe cases, and in these tachycardia is also frequent.

The diagnosis is often difficult. The pain in the legs in the neighborhood of the shins is the most constant symptom. The disease may be distinguished from relapsing fever by the absence of the *Spirochaeta recurrentis* from the blood. From influenza it is particularly differentiated by the absence of any catarrhal symptoms and by the lack of prostration in trench fever early in the disease. In dengue fever a rash is usually present and the distribution of pain is different. Trench fever may be distinguished from malaria, undulant fever, and enteric infections by the appropriate blood and serum examinations.

The treatment is entirely symptomatic. Aspirin and morphin relieve the pain, but seem to exert no influence over the course of the disease. Quinin and salicylic acid and intravenous injections of antimony, salvarsan and eusol did not affect the fever. The injection of the serum of convalescents in several instances also has not appeared to shorten the attacks.

The infectious nature of trench fever was demonstrated by McNee, Renshaw, and Brunt, by the transmission of it to healthy men by the subcutaneous injection of blood taken from patients during the active stage of the disease. In this way it was determined that the shortest incubation period was six days and the longest twenty-two. It was not possible to produce the infection with the biood serum of infected individuals unless hemolysis of the red blood cells had taken place. The plasma was also not found to be infective unless hemolysis had occurred, and filtered serum and plasma were also inactive. The red blood corpuscles, however, were found to be capable of causing the disease even after being washed several times in saline solution. The infected agent is not apparently filtrable; if the red cells from the patient are ground up with fine sand and the blood then filtered, the filtrate is quite inactive.

Transmission.—It is commonly believed that transmission of this infection occurs through the louse. Muir, however, opposed this view and stated that in a small percentage of the cases the absence of lice was certain. Davies and Weedon report one case in which one of them was twice bitten by a louse, the first time just after it had been allowed to feed on a case of the disease and a second time twenty-four hours later. A typical attack of trench fever developed twelve days later in the individual so bitten. Hurst also reports that Captain Urquhart developed the short form of trench fever after allowing lice taken from a patient with this form of the disease to bite him. He also gives some evidence of a soldier who was infected with vermin and who shortly afterward contracted the disease.

Etiology.—Extensive investigations regarding the etiology of the disease have been made, but the organism causing it has apparently not yet been definitely detected by the microscope or the ultramicroscope either in fresh or in stained preparations. Sergent, and later Renaux, found semilunar bodies in the blood which occurred particularly from two to four hours following each relapse. Houston and McCloy regarded the enterococcus which was isolated from the urine in the majority of cases as the cause of the infection. Dimond has described a protozoon, a hemogregarine, in twelve cases, both in the venous blood and in material obtained by splenic puncture. He states the organism was only discovered after the blood had been drawn in 1.8 per cent. citrate solution and then hemolyzed by the addition of a 0.5 per cent. solution of saponin. The parasite was found after this solution had been centrifuged. This discovery, however, has not been confirmed. Pappenheimer found discoid bodies in blood films and in specimens taken from near the periosteum, and in cultures from the blood and tissues of trench fever patients. He later concluded that these were not of a parasitic nature. Patterson has very recently found spirochetes in the urine in fifteen cases of trench fever. Nankivell and Sundell have also found a spirochete in twelve of fifteen typical cases of trench fever. No work was done regarding the pathogenicity of this organism for man or animals. In eighty control cases, either healthy or suffering with other diseases, spirochetes were not found in the urine. These authors did not succeed in finding the spirochete in the blood in trench fever cases or in cultivating it from the blood stream, as, according to them, Reimer claims to have done. However, Stoddard has also just reported the presence of spirochetes in 33 per cent. of individuals in the examination of specimens taken from the urethra or the urine. Hence the mere presence of a spirochete in the urine in trench fever cases cannot be regarded as conclusive evidence that this organism is the cause of the disease or that it bears any direct relation to it.

In relation to prevention, it appears that at the present time it is most important to determine definitely whether the disease is transmitted through the medium of the louse. This should not be difficult to demonstrate. The parasite causing yellow fever is not yet discovered, but the disease is prevented and its spread controlled by the knowledge of its method of transmission by the mosquito. R. P. S.

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SATURDAY, FEBRUARY 2, 1918

THE COST OF ADEQUATE NUTRITION

The commendable program which plans to promote victory under the slogan of "serve by saving" encounters almost insurmountable obstacles when it is brought face to face with the daily life and living problems of the so-called poorer classes. There is a large group of our population in which the balance of income and expenditure leaves little if any margin of resources to be applied to emergencies, such as are represented by sickness or war time. In periods of stress, therefore, a larger income must be provided either by increased wages or by some form of relief, if an adequate supply of food and other necessities of life is to be obtained. Previous to our entrance into the world war, it was estimated that between $800 and $900 a year was the minimum figure at which a decent and efficient standard of living could be maintained for a typical family of five. Stern and Spitz,[1] to whom we owe interesting studies in this field, have pointed out, as found by Scherschewsky, that in a group whose income was $500 or less, undernourishment and sickness were twice as great as in the groups earning from $700 to $900. Thus, practical medicine is directly interested in this topic.

It is a dictum among social economists that not more than 40 per cent. of the family income can safely be spent for food if all the other essential items of rent, fuel, clothing, etc., are to be provided properly. On this basis, an annual income of $900 would allow approximately $7 per week for the food budget. If we estimate the food needs of an average family of five (mother, father and three children) at 12,000 calories per day, the outlay per thousand calories might reach 8 cents. This sufficed to purchase adequate nutrition in 1913. What will suffice today?

A partial answer is afforded by a study of the food supply in 200 families of limited means in Boston during the past summer.[2] More than half of these were spending over 60 per cent. of their weekly income for food; 75 per cent. of the 200 or more families studied were spending more than 50 per cent. In the past, families with incomes of between $15 and $20 a week have generally been regarded as capable of self-support; yet in eighty-eight Boston families in this income group last July, 50 per cent. expended more than half their income for food. When, in the less favorably situated classes, even more than this must go for food and rent, the great difficulty of maintaining a proper family life and the impossibility of providing for emergencies or other future needs are beyond debate.

These war-time statistics bring the minimum cost of the weekly family food to $10. An analysis of what was actually purchased enables us to give some answer to the inquiry, just propounded, as to the present cost of adequate nutrition on the family basis. In about three quarters of the families, the cost of 1,000 calories was over 10 cents; in one third of them it was over 12 cents. As was to be expected, the larger families were able to purchase with slightly more economy; the differences between nationalities were insignificant.

"The general public needs to be much more fully awakened to the serious effect of present food prices on the nutrition of families of small means, particularly families in which there are many young children." This statement of the League for Preventive Work in Boston places a burden of responsibility on the nation; it rests even more heavily on the physician, who sees the direful consequences of rising costs of food. It is true, of course, that wages have increased in considerable degree; yet, if we may depend on a current statement of the California State Board of Charities, that 50 per cent. or more in some communities, at least, earn $1,000 or less per annum, the conclusion seems inevitable that an increase of income as well as food instruction may become necessary — indeed, it is already imperative in the lower income groups of our population. Philanthropic agencies which supply material relief must face this situation in the light of the recent evidence. Our Food Administration must reckon with the psychology and physiology of the current cost of calories.

What can be done? We have recently discussed some of the peculiarities of the dietaries of the poorer classes and the changes which they might advantageously permit.[3] The crux of the situation has been thus summarized in the Boston report:[2] By purchasing little except those foods which provide considerable quantities of energy and are inexpensive (such as the breadstuffs and cereals), it would be possible for families to buy the average 1,000 calories at between 6 and 8 cents; but such a diet would be insufferably lacking in variety, and is not in fact

1. Stern, Frances, and Spitz, Gertrude T.: Food for the Worker, with a foreword by Lafayette B. Mendel, Boston, 1917.

2. Davis, M. M., Jr.: Food Supply in Families of Limited Means, report written by chairman of committee, Pub. 3, League for Preventive Work, Boston, December, 1917.

3. The Food of the Poorer Classes in War Time, editorial, THE JOURNAL A. M. A., Jan. 26, 1918, p. 234.

carried out. A reasonably satisfactory diet, with adequate allowance of milk, sufficient vegetables and fat, a little fruit, a very moderate allowance of meat or fish, and no luxuries, could not at the prices prevailing a few months ago, or even at less cost, be purchased by a family of average size for less than 10 cents per thousand calories, and in most instances for not less than 12 cents. The facts seem to be unmistakable. Never was there greater need of competent advice in food economics.

CALCIUM IN THE BLOOD

It has been emphasized on numerous occasions in these columns that the routine examination of the blood by chemical as well as by bacteriologic procedures has come to take its place side by side with older long tried methods of clinical diagnosis. First of all, the enumeration of corpuscles and the study of their morphology found a wide application in diagnostic routine; then followed the era of the microscopic search for parasites and the application of improved bacteriologic technic; later the methods of immunology were brought to bear on the problems of disease with a helpfulness illustrated by the daily use of the Wassermann test; and now chemistry, long represented in blood examination primarily by the estimation of hemoglobin, is contributing information in the greatest diversity of analytic facts.

With respect to the calcium content of the blood as a whole, it was pointed out,[1] on the basis of Lyman's data,[2] that small variations at most seem to occur. Values ranging from 5.2 to 9.6 mg. per hundred c.c. are given for apparently normal persons. Occasional figures that were very high or very low were left unaccounted for. The probable explanation for the latter is pointed out in two recent contributions to the subject: one by Halverson, Mohler and Bergeim[3] of the Jefferson Medical College of Philadelphia, and the other by Marriott and Howland[4] of the Department of Pediatrics at the Johns Hopkins University. The blood corpuscles contain little or no calcium, so that any significant changes in the blood calcium values will be shown only by the plasma or serum values. If the whole blood were used in analysis, the calcium content would vary inversely with the corpuscular count, other things being equal. Thus, for example, the extremely low value of 2.8 mg. calcium per hundred c.c. of whole blood has been reported in a case in which a hemoglobin estimation of 160 per cent. of the standard was reported.

Lyman reported an unmistakable difference in the average figures obtained from examination of the blood of males and females, represented by the figures 6.1 and 7.1 mg. per hundred c.c. of blood, respectively. Halverson, Mohler and Bergeim point out that the volume of plasma per unit of whole blood has also been shown to be on the average from about 10 to 20 per cent. greater for women than for men, though of course not constant for the sexes. The different values obtained for calcium, a plasma constituent, are thus readily accounted for. Calcium determinations on whole blood are of little value unless the relative volume of plasma and corpuscles is known.

From what has been said, it might be expected that aside from the factors introduced by the varying proportions of corpuscles and plasma, of anhydremia and anemia, variations in the calcium content of the plasma will occur regularly in relation to its water content or dilution. This appears to be the case. There is now a uniformity of evidence that the serum of normal adults and infants contains from 9 to 11 mg. of calcium per hundred c.c. In nearly all of the pathologic conditions studied, including cases in which the blood clotted with extreme slowness, a similar range was observed, indicating a great constancy of this element in the blood serum. Distinct decreases were noted in cases of hematogenous jaundice, eclampsia, pneumonia, and particularly uremia.

Great reductions have been reported by Marriott and Howland to occur in infantile tetany and terminal uremic conditions.[5] The Philadelphia investigators remark that while these decreases in serum calcium are notable as contrasted with findings in most other conditions, the fact that values of less than 8 mg. are rare, even when the condition approaches coma, rather leads them to emphasize the great constancy of this element as compared with most blood constituents. *A priori,* this might appear remarkable, they continue, in view of the insolubility of the carbonates and phosphates of calcium and consequent difficulties of excretion and metabolism. On the other hand, it appears that the plasma is a saturated or supersaturated solution of calcium bicarbonate. Hence any appreciable or permanent increases are not readily brought about, while at the same time the calcium present is not readily reduced in amount by precipitation, or by excretion on account of the large reserves of calcium in the bones. Thus in nephritis notable decreases in calcium appear to occur only in the most severe types in which we know the blood composition to be in other respects markedly altered. In mild or chronic nephritis or cases mainly cardiac in character, the calcium values were normal or little

1. The Calcium Content of the Blood, editorial, THE JOURNAL A. M. A., June 23, 1917, p. 1915.
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below normal. In uremia, comatose in character, values of from 7 to 8 were usually obtained, the lowest value being 6.8. The attempts to increase the serum values to any marked degree by administration of even large amounts of calcium salts have not been successful.[6]

WHAT CONSTITUTES GOOD MILK?

What constitutes good milk? The fact that in at least one state, New York, milk is frequently sold with a grade label to designate its quality suggests that it is not difficult to establish satisfactory standards for this important food product. An investigation of the current methods of "scoring" milk, where this is done, shows, however, that the usual basis for evaluating market milk and classifying the product is founded essentially on the conditions under which it is produced and only to a limited extent on the inherent quality of the food. The inadequacy of the usually accepted criteria is attested by the fact that for several years the Official Dairy Instructors' Association, now the American Dairy Science Association, has recognized the necessity for a change of attitude in the matter of dairy scores, and has entrusted the problem of revising the current methods to a representative committee of scientists. Their report,[7] recently made public, is a timely one at a period when the questions of milk production and consumption have been brought prominently before this country in relation to the food needs of war time.

In reality, the goodness or badness of milk depends on several factors, and confusion has arisen because at successive periods interest has been concentrated, owing to the trend of the times, on some single feature that is subject to variation. Before the days of modern bacteriology, the watering and skimming of milk constituted the foremost recognized ways of deteriorating this product. The establishment of minimum legal standards of composition, a protective measure that dates back more than half a century in some states, has had a wholesome effect in preventing gross adulteration; but as Harding and his colleagues have pointed out,[7] with the narrow margin of profit that exists in milk production, there has been an unexpected secondary effect of the legal enactments. They have impelled the production, within the law, of milk with the smallest food value that the market would accept without reduction of price. When the law prohibited the reduction of food value by watering milk, the same result was frequently accomplished by the selection of animals producing milk which approached the legal minimum limits. Yet food value ought not to be divorced from quality standards.

At a subsequent period, the recognition of the tuberculosis of cattle as a menace to the milk supply, and still later the discovery of the occasional bacterial contamination of milk which renders it capable of transmitting not only tuberculosis but also sore throat, typhoid fever, scarlet fever and diphtheria,[8] focused attention so forcibly on the occurrence of pathogenic micro-organisms in milk that the hygiene of the supply long overshadowed every other consideration. It has been responsible for much of the ardent controversy about pasteurization and for the medical supervision of animals and employees, culminating in the exhibition of certified milk. Yet we are forced to admit today that bacteria per se do not necessarily render milk unfit for human consumption, else sour milk would find no place in the dietary. Studies of germ life in the udders of cows have made it plain that bacteria are constantly present in all samples of normal milk from the mammary glands to the consumer.[9]

These truths, to quote the experts of the American Dairy Science Association, are gradually bringing home to the public an appreciation of the fact that there is very little connection between the amount of germ life in milk and the healthfulness of the milk. Germs are just as normally a part of milk, we are further assured by the four representative bacteriologists of the association, Harding of Illinois, Breed and Stocking of New York, and Hastings of Wisconsin, as are lactose, fat globules and body cells. The consumer, they add, has little interest in the germ content of milk except for a limited number of disease-producing forms, against which he has a right to insist on adequate protection, and except so far as the germ life produces objectionable changes, such as souring or bad flavors in the milk itself. The keeping qualities of the milk, however, on which the consumer has a right to insist, present a problem involving bacteria. The restriction of contamination and development of micro-organisms is a complex matter; but by learning to discriminate between germ content and healthfulness on the one hand, and germ content and cleanliness (which determines keeping quality) on the other, it ought to become possible before long to improve the latter. It is only now becoming apparent that many mistaken conceptions have been held in the past about the contaminating germs. As we previously pointed out, even clean dairy utensils are a generous source of such organisms if they are not handled so as to obliterate bacteria. Air and dust particles are far less objectionable sources of germ life. We are acquiring new points of view.

6. Halverson, J. O.; Mohler, H. K., and Bergeim, Olaf: Calcium in the Blood in Tuberculosis, The Journal A. M. A., May 5, 1917, p. 1309.

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In the light of what has been learned, then, good milk must exhibit several desirable qualities. It should have a high food value, of which the fat content is a good relative index, though by no means the sole criterion. It must be made safe from the standpoint of disease, and thus healthful by being produced under the competent supervision of cows and men or by being properly pasteurized. Milk ought to be clean in the sense of being reasonably free from obvious dirt. Even today it has become one of our cleanest foods. And it must be produced and handled so as to keep well. For these factors — food value, as expressed by composition; healthfulness, or elimination of dangerous contamination; cleanliness, or protection from dirt; keeping quality, as determined by care of utensils, cooling, and prompt delivery — there is a mutual responsibility on the part of producers, distributors, and even consumers.

Current Comment

MEASLES AND GERMAN MEASLES IN THE ARMY CAMPS

While much is said regarding measles (morbilli) in the Army camps, it seems to be less generally realized that German measles (rubeola) also is prevalent. Rubeola is practically never fatal and complications are rare, whereas measles is often accompanied by most serious complications (bronchopneumonia, otitis media), besides leaving the subject, if he recovers, strongly predisposed to tuberculosis. Many who have suffered from measles in the Army camps also have suffered from bronchopneumonia due either to streptococci or to pneumococci. A number have died, and for those that have recovered from the complicating pneumonia, convalescence has been in many instances delayed by an empyemic sequel. The differentiation of morbilli from rubeola, though difficult in single instances, is in the majority of cases a relatively easy matter to the closely observant physician. In measles, the prodromal stage with its catarrhal symptoms (coryza, photophobia, conjunctivitis and cough) is, in itself, fairly characteristic; and when the disease is epidemic, such catarrhal symptoms should at once excite suspicion. The preceding incubatory leukopenia with relative lymphocytosis and eosinopenia is of some diagnostic importance. Above all, the pathognomonic "Koplik's spots," small, slightly elevated, white or bluish white, sharply circumscribed white spots, the size of the head of a pin or smaller, surrounded by a narrow hyperemic zone, should be sought for on the buccal mucous membrane — opposite the molar teeth, inside the lips, or at the junction of the gums with the cheeks. They are present in six out of every seven cases of morbilli, and are visible in the prodromal stage. Again, the maculopapular eruption of morbilli, once it has appeared, is very characteristic. It comes first on the face and scalp, often in front of and behind the ears, and extends to the neck, upper trunk and arms, and, later, to the lower trunk, buttocks and thighs, requiring from two to two and a half days after its first appearance for its full development. At first it is pink, but soon it turns darker red and often brownish red. As von Pirquet has shown, the times of appearance of the rash on the different parts of the body stand in definite relations to the cutaneous arterial supply; the rash appears earliest on parts of the skin in which the arterial distance from the heart is least and the circulation liveliest. The crescentic grouping of the maculopapular eruption is often striking. In rubeola, or German measles, the prodromes are mild or absent, Koplik's spots are not present, the rash is macular rather than papular, it is of a lighter rose red, and its macules are rarely confluent. Beginning on the face or scalp, it extends (in crops) over the rest of the body in about twenty-four hours. In a few instances, the rash resembles that of measles; more often it could be confused with that of scarlet fever.

SOCIAL MEDICINE IN RUSSIA

These are days when national pride and prowess are asserting themselves in all parts of the world. The ideals and the practical efficiency of many peoples are being compared. Medicine has become so thoroughly internationalized, however, that political boundaries have played little part in its recent trend and development. All of the civilized races and the leading nations of the world have contributed in some way to medical progress. The turmoil of war time may sometimes blind us to the just deserts of certain groups, but history will bring the facts into truthful relief. In thinking of Russia, now a land of seething revolution and administrative upset, let us not forget that she gave us one of the earliest Nobel laureates in medicine: Pawlow, the master student of the physiology of alimentation. And similarly Winslow[1] has pointed out the somewhat unique contribution which Russia has made to the art of public health administration in the organization of a combined system of free medical care and health protection for her rural population through the medium of the zemstvos, or local representative assemblies. Since these elective bodies date back little more than fifty years, it is surprising to us to learn that as early as 1870 the introduction of the system of fixed medical districts in remote rural districts, each provided with a small hospital and a qualified physician, was already begun. Thus the care of the sick was clearly recognized by the zemstvos as a natural duty of society rather than as an act of charity. The importance of the service initiated in this way will better be appreciated if it is recalled that 85 per cent. of the 180,000,000 souls in Russia dwell in the country. In emphasizing this remarkable development of social medicine along curative lines, Professor Winslow, who speaks with the experience of his recent trip with the American Red Cross Mission to Russia, says that on account of the peculiarly acute needs of her rural population that nation has already developed the state care of the sick to a point of which we are just beginning to dream. Modern sanitary engineering evidently

1. Winslow, C.-E. A.: Public Health Administration in Russia in 1917, Pub. Health Rep., 1917, **32**, 2191.

still remains to be developed in Russia. The development of public health activities along medical and bacteriologic lines, on the other hand, is modern and progressive. As zemstvo and municipal medicine develop and acquire greater educational and preventive quality, we may look, says Winslow, for unprecedented successes in the control of preventable disease in the great Sister Republic.

PHYSICAL EXAMINATION OF REGISTRANTS

Two weeks ago we noted the appointment of a board, on the recommendation of the Surgeon-General, to revise that section of the Selective Service Regulations governing the physical examination of registrants. This board[1] has just made its report, which appears on page 317 of this issue. Many changes have been made in the regulations. They consist chiefly of defining certain standards for unconditional acceptance or unconditional rejection by the local boards. One of the chief reasons for defining such standards is that the selective service law permits the acceptance of registrants for special duties. These registrants who have not the physical qualifications for general military service may be otherwise physically and mentally qualified for special military service. Under the new regulations, physicians of the local boards are not required to make a complete examination of every registrant before rejection. They are required to make a complete physical examination before unconditional acceptance, and even then the registrant may appeal to the Medical Advisory Board for a second examination. The result of the new regulations is practically to throw the large burden of the examinations on the Medical Advisory Boards. In other words, the wholly normal or markedly abnormal, which constitute the smallest number of men in general, come within the purview of final action by the local board. All others are referred to the Medical Advisory Boards.

HONORS TO COLONEL GOODWIN

Col. T. H. J. C. Goodwin, C.M.G., D.S.O., who, during his stay in the United States as liaison officer in the Surgeon-General's Office, endeared himself to every medical officer with whom he came in contact, returned to England a few weeks ago. Now comes the announcement of his appointment as Deputy Director General of the British Army Medical Service on the retirement of Surgeon-General Sir M. W. Russell, K.C.M.G., C.B. Colonel Goodwin was commissioned in the British army in 1893, and acted as staff surgeon in military operations on the northwestern frontier of India. As a result of this work he was mentioned in dispatches and received the Distinguished Service Order. He was with the first English troops to be sent to France, aiding in stopping the German advance, and taking part in the retreat from Mons. During the present war he has been recognized in dispatches and by decoration and promotion, being especially noted for his high administrative abilities. While in this country he delivered numerous lectures, particularly a series in the Army Medical School in Washington. His talks were noted for their intense sympathy, beautiful language and absolute clearness. The final hint given in his recently published manual "Notes for Army Medical Officers" represents, no doubt, the keynote of his well-deserved success:

"The keystone of efficiency in the Army is *'Loyalty.'* 'Loyalty' to the Army and to the medical profession, 'loyalty' to one's unit and Commanding Officer, 'loyalty' to one's Juniors."

1. The board consists of: Col. George E. Bushnell, U. S. Army, retired; Lieut.-Cols. Thomas L. Rhoade and Philip W. Huntington, M. C.; Majors Pearce Bailey, Joseph C. Bloodgood, Elliot C. Brackett, William H. Logan, Warfield R. Longcope, Walter R. Parker and Charles W. Richardson, M. R. C.; Contract Surg. Henry H. Morton, U. S. Army; alternate, Contract Surg. William A. Pusey, U. S. Army.

HE DIED "IN FLANDERS' FIELDS"

A few months ago we published an inspiring and beautiful poem entitled "In Flanders' Fields." It was written by Lieutenant Colonel, at that time Captain, John McCrae. Here is the first verse of the poem; it contains but two:

In Flanders' fields the poppies blow
Between the crosses, row on row,
That mark our place, and in the sky
The larks still bravely singing fly,
Scarce heard amidst the guns below.
We are the dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie
In Flanders' fields.

Thousands of our readers will regret to learn that Colonel McCrae died in France, January 28. Again it is pneumonia. Colonel McCrae was of the Canadian Army Medical Corps, in charge of Medical Division No. 3 of the Canadian General Hospital. He was born forty-five years ago, graduated from the University of Toronto in 1898, was lecturer in medicine in McGill University, assistant physician to the Royal Victoria Hospital, Montreal, and co-author with J. G. Adami of the well-known textbook of pathology. He had become one of the leading medical men of Canada, and at the outbreak of the war volunteered his services. Few men will be missed more than he. May we repeat his message as contained in the other verse of his poem?

Take up our quarrel with the foe,
To you from falling hands we throw
The torch—be yours to hold it high.
If ye break faith with us who die,
We shall not sleep though poppies grow
In Flanders' fields.

MINNESOTA MEDICINE

The Minnesota State Medical Association has joined those constituent state associations which publish their own medical journals. The January issue, the first number, announces that the journal will be independent and that it will work only for the best interests of the profession and the public. The contents of this first number, as well as its make-up, give promise that this policy will be fulfilled and that the journal will serve the state association in attaining the purpose of the organization—that the profession shall become capable and honorable within itself and more useful in its service to the public. The new journal will accept

advertisements for medicinal preparations only when these conform to the rules adopted by the Council on Pharmacy and Chemistry of the American Medical Association for the protection of the medical profession and the public, and it is stated that everything appearing in the advertising pages will be edited as carefully as the reading matter.

Medical Mobilization and the War

Medical Corps Instruction Extended

In order to equip officers and men in the special work required of the medical corps, and its sanitary, dental and veterinary branches, extensions are being arranged for medical camps at Fort Oglethorpe, Ga., and Fort Riley, Kan. There are at present 5,400 officers and men under training at Fort Oglethorpe and 3,800 at Fort Riley. Fort Riley has a capacity of 7,000. Enlargement of the school at Fort Oglethorpe to the same capacity has been authorized, its present capacity being 5,500. There have been graduated from medical training camps since June 1, or are now under instruction, a total of about 9,000 officers and about 20,000 enlisted men. The medical training camp at Fort Benjamin Harrison, Ind., and the one at Fort Des Moines, Iowa, for colored officers and men, which contributed to the total, have been discontinued.

A Bibliography of the War Cripple

The Red Cross Institute for Crippled and Disabled Men, 311 Fourth Avenue, New York City, has issued a most exhaustive bibliography of references to literature treating of reeducation, employment, and other forms of after-care for crippled soldiers and sailors. It includes references to editorials, articles, bulletins and books in various languages. The compilation was made by Mr. Douglas C. Murtrie, and appears to be quite complete. There are over 1,050 references. The bibliography is timely and will prove of great value for those who are interested in this extremely important question.

Soldiers and Sailors' Insurance

The Bureau of War Risk Insurance by its Soldiers and Sailors' Campaign Council has addressed a letter to the public through the newspapers and other publications urging the taking of the full amount of insurance provided by the government for soldiers and sailors by every member of the naval and military forces entitled to such insurance. The response to the insurance law has been large, but there still remain a large number who have failed to apply for the insurance, perhaps not understanding that the privilege of applying expires within 120 days after they enter the service. For those in the service before Oct. 15, 1917, the last day is February 12. Medical Reserve Corps officers are entitled to apply for the insurance as soon as they are called to active duty.

Two Medical Officers Convicted by Courts Martial

Lieut. John G. Dwyer, M. R. C., U. S. Army, Cullom, Ill., a graduate of Chicago College of Medicine and Surgery in 1913, and on duty at Camp Funston, Kan., and Lieut. Charles Willard Cole, M. R. C., U. S. Army, Norton, Kan., a graduate of Central Medical College in St. Joseph, Mo., in 1903, on duty at Camp Beauregard, La., have been court martialled and recommended to be dismissed from the service on account of neglect of duty. In the first case, a soldier who was too ill to be "put to stand attention," is said to have appeared before Lieutenant Dwyer and been ordered to double duty. The following day he was sent back to the hospital, and died from pneumonia, soon afterward. In the case of Lieutenant Cole the evidence showed that several sick soldiers had been transferred from regimental infirmaries to base hospitals, and that no immediate attention had been paid them. They were not admitted but were kept in the ambulances. Afterward Lieutenant Cole went out to see the men and refused to receive them into the base hospital, ordering them returned to the infirmaries. In both cases the proceedings have been returned and the court martial reopened on the ground, as the receiving officer says, that the order for dismissal was wholly inadequate as a sentence.

SELECTIVE SERVICE REGULATIONS

Physical Examinations of Registrants

As already noted in THE JOURNAL, a board was appointed to fix more definitely than at present the standards by which is to be determined the final fitness of registrants for duty under the Selective Service Law and of applicants for enlistment. The following is the report issued by this board:

NEW REGULATIONS FOR THE PHYSICAL EXAMINATIONS OF REGISTRANTS BY THE PHYSICIAN OF THE LOCAL BOARD

Section 182. Preliminary Statement.—In view of the contemplation of a further investigation and classification of registrants physically qualified for special and limited military service, who have not the physical qualifications for general military service, and in view of the decision to accept some registrants for general military service with remedial defects, who are otherwise physically and mentally qualified for military service, the following new regulations for the physical examination of registrants by the physician on the Local Board become necessary.

Local Boards can *accept* registrants for general military service only when they come within the standards for unconditional acceptance with or without remediable defects.

Local Boards can *reject* registrants for general military service only when the registrant comes within the standards of unconditional rejection.

All other registrants must be referred by the Local Board to the Medical Advisory Board for further examination and classification.

Physicians on the Local Board are not required to make a complete examination of every registrant. The moment the physician on the Local Board finds a mental or physical defect placing the registrant within the standards of unconditional rejection the physician on the Local Board shall indicate this on Form 1010, Section 282, page 156, after "physically deficient and not physically qualified for military service by reason of"—in the space following, write the disqualifying defect.

The moment the physician on the Local Board finds a defect which does not come within the standards of unconditional rejection but takes the registrant out of the class within the standards of unconditional acceptance, he will refer the registrant to the Medical Advisory Board and so indicate this in Form 1010, Section 282, page 156.

Registrants cannot be declared physically qualified for general military service (see Form 1010, Section 282, page 156) until the complete examination has been made by the physician on the Local Board with the finding that the candidate comes in every instance within the standards of unconditional acceptance with or without remediable defect. Then it is so noted and recorded in Form 1010, Section 282, page 156, and if there is a remediable defect, this is also recorded after "physically qualified for general military service."

Section 183. Place, Order and Method of Examinations.—The physical examination should take place in a large well-lighted room. Question the registrant first about his physical condition, observe his mental characteristics and speech.

Be on the lookout for malingering throughout the entire examination. Examine the scalp and face, nose, teeth, mouth, and fauces. Palpate the skull, then have the registrant strip off all his clothing, and make a general inspection of the skin over the entire body, of the conformation of the back, chest, and abdomen, of the region of the neck and buttocks, and of the upper and lower extremities. Inspect for the bulgings of hernia, inspect the genitals, palpate the testicles, inspect the anus, tell the registrant to move all the joints of the extremities and to bend the neck and body for observations on movements of the spine.

Take the weight and height and chest measurements while the registrant is stripped of all his clothing. The chest measurements are taken on the level just above the nipple with the tape horizontal.

During examination of the chest and of the eye and ear, the registrant may put on his underdrawers, trousers, shoes and stockings.

Guard against the registrant becoming chilled.

The local physician can use his judgment as to the order of the physical examination.

Section 184. Special Examinations and Standards for Unconditional Rejection, Unconditional Acceptance, with or without Remediable Defects, and Reference to the Medical

Advisory Boards.—Remember that the Local Boards can accept or reject for general military service or refer the registrant to the Medical Advisory Board for further examination and classification. The Local Boards cannot place the candidate in the class "physically qualified for special or limited military service" (see Form 1010, Section 282, page 156) for reasons already given.

(*a*) MENTAL AND NERVOUS.—Reject insanity, epilepsy, idiots, imbeciles, and proven chronic alcoholism when the examination places the registrants within the standards of unconditional rejection as defined below.

Insanity.—All registrants who are committed or who have been committed to a licensed institution for insane or licensed private institution, who bring proof from verified records of institution or State Boards.

Epilepsy.—The registrant will be declared an epileptic when verified histories establish the disease as of long duration and of the type of grand mal.

Idiot.—A registrant so deeply defective in mind from birth or from early age that he is unable to guard himself against common physical danger.

Imbecile.—A registrant so deeply defective in mind from birth or from early age as to be incapable of earning a livelihood but able to guard himself against common physical danger.

Chronic Alcoholism.—The registrant on examination must show suffused eyes, prominent superficial blood vessels of nose and cheek, flabby, bloated face, red or pale purplish discoloration of mucous membrane of pharynx, and soft palate; muscular tremor in the protruded tongue and extended fingers, tremulous handwriting, emotionalism, prevarication, suspicion, auditory and visual hallucinations, persecutory ideas.

The history or evidence that the registrant has been frequently and grossly intoxicated is not of itself sufficient for a diagnosis of chronic alcoholism and rejection.

Accept all registrants with apparent normal understanding and whose speech can be understood and who have no definite signs of organic disease of the brain, spinal cord and peripheral nerves.

Refer all other registrants to the Medical Advisory Board.

(*b*) SKIN.—*Reject* registrants who have long-existing skin diseases which are so severe or so disfiguring as to be permanently incapacitating, or so disgusting or so disfiguring as to render the sufferers from them unsuitable for common social intercourse, or long-existing ulcers so severe or so extensive as to be permanently incapacitating.

Refer remediable ulcers to the Medical Advisory Board.

Accept registrants who have skin diseases which run an acute or temporary course, or are trivial in character, or do not interfere with the general health, or are not incapacitating. Among the common skin conditions coming in this category are: Acne, Anomalies of Pigmentation, Scars, Condylomata, Diseases produced by pus infection, Eczemas which have not been of long duration, all forms of Naevi not producing great disfigurement or deformity, all forms of Pediculosis, Scabies, Psoriasis, all forms of Ringworm, Warts, Callosities.

Refer all other cases of skin diseases to the Medical Advisory Board.

Registrants with infectious, syphilitic and parasitic diseases of the skin of temporary character, or with other acute skin diseases, should be advised to accept treatment immediately pending receipt of orders to report for duty.

Accept all registrants with syphilitic lesions of the skin.

(*c*) *Head.*—Accept registrants with depression in the skull or with any abnormalities of the bones of the skull unless they come within the standards of unconditional rejection noted under (*a*) MENTAL AND NERVOUS. Refer all doubtful cases to the Medical Advisory Board.

(*d*) *Spine.*—Accept all registrants with a normal spine or with slight curvatures which do not interfere with function and weight bearing power.

Reject all registrants with signs and symptoms of undoubted extensive disease of the vertebrae which totally incapacitate. The wearing of a plaster jacket does not of itself reject.

Refer all other registrants and doubtful cases to the Medical Advisory Board.

(*e*) *Ears.*—Reject when it can be absolutely proven that the registrant is totally deaf in both ears.

Accept when the hearing in both ears is above the standard of 10/20.

Refer to the Medical Advisory Board when the hearing is below the standard of 10/20 in one or both ears, or complete deafness in one ear.

To determine hearing, the hearing of the examiner should be normal.

Place the registrant facing away from the assistant, who is 20 feet distant, and direct him to repeat promptly the words spoken by the assistant. If the registrant cannot hear the words at 20 feet, the assistant should approach foot by foot, using the same voice, until the words are repeated correctly. Examine each ear separately, closing the other ear by pressing the tragus firmly against the meatus, the examiner faces in the same direction as the registrant and closes one of his own ears in the same way as a control. The assistant speaks in a low conversational voice (not a whisper) just plainly audible to the examiner, and should use numerals, names of places or other words or sentences until the condition of the applicant's hearing is evident. The acuity of hearing is expressed in a fraction the numerator of which is the distance in feet at which the words are heard by the registrant and the denominator the distance in feet at which the words are heard by the normal ear; thus 20/20 records normal hearing, 10/20 imperfect hearing, etc. If any doubt as to the correctness of the answer is given, the registrant should be blindfolded and a watch should be used, care being taken that the individual does not know the distance from the ear at which it is being held. The watch used should be one whose ticking strength has been tested by trial on a normal ear.

Accept all registrants whose hearing is above the standard of 10/20 in both ears and who have no chronic discharge from the middle ear.

Refer to the Medical Advisory Board all registrants with chronic discharge from the middle ear, and all doubtful cases.

(*f*) Eyes.—*Reject* all registrants with the absence of one eye and when there is no doubt they are totally blind in *both eyes.*

Accept all registrants with vision 20/100 in one eye and 20/40 in the other without glasses or 20/100 in each eye without glasses if correctable with glasses to 20/40 in either eye. When the physician on the Local Board is not supplied with test glasses and the registrant has no glasses, refer to the Medical Advisory Board.

Accept all registrants who come within or exceed the above visual requirements though they may have the following slight defects:

Slight adhesions of the lids to the eyeball.
Small pterygium.
Slight eversion of the lids.
Ptosis, when not interfering with vision.
Strabismus, if vision up to standard.
Iridectomy, or other operation is in itself not a cause for rejection if condition for which it was performed is relieved.
Color-blindness is not a cause for rejection.
Refer to the Medical Advisory Board all other cases.

Vision.—To determine the acuity of vision, place the person under examination with back to window at a distance of 20 feet from the test types. *Examine each eye separately, without glasses,* covering the eye with a card (not with the hand). The applicant is directed to read the test types from the top of the chart down as far as he can see, and his acuity of vision recorded for each eye with the distance of 20 feet as the numerator of a fraction and the size of the type of the lowest line he can read correctly as the denominator. If he reads the 20-feet type correctly, his vision is normal and recorded 20/20; if he does not read below the 30-feet type, the vision is imperfect and recorded 20/30; if he reads the 15-feet type the vision is unusually acute and recorded 20/15, etc.

(*g*) Mouth, Nose, Fauces, Pharynx, Larynx, Trachea and Esophagus.—*Reject* all irremediable deformities and diseases which interfere with mastication of ordinary food, and interfere with speech so the registrant cannot be understood.

Reject registrants who have a permanent gastrostomy or who are wearing a permanent tracheotomy tube.

Accept all registrants who have not complete obstruction to nasal breathing.

Accept all registrants with nasal polypi, deviation of septum, enlarged tonsils and adenoids if obstruction to nasal breathing is not complete, and all remediable benign tumors.

Refer all other cases and all doubtful cases to the Medical Advisory Board.

(*h*) *Neck.—Reject* fully developed exophthalmic goiter when there is present thyroid enlargement, pulse rate above 120 and exophthalmos.

Accept registrants with normal necks, moderate enlargement of thyroid with no toxic symptoms; Accept with a few palpable lymph glands with or without healed scars and no sinuses.

Refer all other and doubtful cases to the Medical Advisory Board.

(*i*) *Lungs.*—The examination of the lungs by the physician on the Local Board should in all instances include the following proceedures.

Each registrant should be required to exhale his breath, cough, and immediately breathe in. The chest should be auscultated during this process. All men who show moist sounds during cough or during respiration should be referred to the Medical Advisory Board.

All registrants should be referred to the Medical Advisory Board in whom at this examination there is well-marked dullness on percussion, increased transmission of the voice, harsh respiration, and prolonged expiration even though there be no râles present. Men distinctly under weight or with sunken and deformed chests should be referred to the Medical Advisory Board, even if the examinations above noted are negative.

Accept registrants when the examinations noted above are distinctly negative, and the physician of the Local Board is of the opinion that there is no evidence of disease of the pleura, lungs, and mediastinum.

Refer all other cases to the Medical Advisory Board.

Reject no registrants for diseases of the lungs, pleura, mediastinum, and chest wall, except men with tuberculosis or other diseases of lungs, pleura, and mediastinum, who are confined to their beds, when verified histories establish unmistakably the existence and long duration of diseases.

(*j*) *Heart and Blood Vessels.*—The physician on the Local Board shall make the following examinations of the heart and blood vessels:

1. The *examination* should in all cases include:

(*a*) Location and determination of character of apex impulse.

(*b*) Auscultation of the heart sounds over apex, lower sternum and second and third interspaces to right and left of sternum, noting accentuation of sounds and murmurs.

(*c*) Exercise test: Hopping 100 times on one foot. At cussion of first interspace on each side of manubrium for evidence of aneurism.

(*d*) Count of radial pulse, observation of its rhythm, and palpation of radial arteries for unusual thickening or high tension.

(*e*) Exercise test: Hopping 100 times on one foot. At close count heart rate with stethoscope over apex, listening for murmur and noting how long tachycardia and unusual dyspnoea persist. After two minutes neither should be marked.

After this examination the Local Board shall accept all registrants who come within the standard for unconditional acceptance, which is as follows:

Standard for Unconditional Acceptance.—2. Subjects with apex impulse within the left nipple-line and not below the fifth interspace, of normal, not heaving character, with normal sounds, free from murmurs, without pulsation or dullness above the base of the heart, with regular pulse of normal rate, who have no unusual thickening of the arteries or evidence of high blood-pressure, and who show a normal response to the exercise test, may be unconditionally accepted.

3. The Local Board shall reject all registrants presenting definite symptoms of circulatory failure, viz.: a combination of breathlessness, marked cyanosis and oedema.

4. All other cases shall be referred to the Medical Advisory Board.

(*k*) *Abdomen.*—*Accept* all registrants who after an inspection percussion and palpation of the abdomen show no enlargement of the liver and spleen and no tumor of the abdominal wall or within the abdomen.

Accept all registrants who give a history of abdominal trouble suggesting a chronic appendicitis or gall-bladder disease and who on examination present no signs of such diseases.

Accept all registrants with small or medium reducible inguinal, femoral, umbilical and post-operative hernia.

Accept all registrants with abdominal scars, who give a history of operation for hernia, appendicitis, gall-bladder disease, or for some abdominal injury, providing there is no large hernia in the scar.

Refer to the Medical Advisory Board all registrants who have jaundice, who have enlargement of the liver or spleen or palpable tumor of the abdominal wall or within the abdomen.

Refer to the Medical Advisory Board all registrants who from history and examination suggest very strongly the presence of a gastric or duodenal ulcer or some serious intra-abdominal disease.

Refer to the Medical Advisory Board all irreducible hernia and all very large hernia.

Reject no abdominal cases.

When, during the examination of the abdomen a kidney is palpable and even movable, if it is not enlarged, accept the registrant. If it is distinctly enlarged, refer to the Medical Advisory Board.

(1) *Anus.*—*Accept* all registrants in which the anus is apparently normal and all with small external and internal hemorrhoids, fissures and condylomata.

Refer all other cases to the Medical Advisory Board.

Reject no lesions in this area.

(*m*) *Genito-Urinary Organs and Venereal Diseases.*—*Reject* extraversion of the bladder, distinct hermaphrodices, and registrants whose penis has been totally destroyed by operation or disease.

Accept all cases with no signs of disease of the genito-urinary organs, all acute and chronic cases of gonorrhea and syphilis who have no complications permanently incapacitating.

Accept variococele, hydrocele, undescended testicle, and registrants with but one testicle, providing they do not give a definite history that the removed testicle was the seat of malignant disease.

Refer all cases in which the history and examination indicate an acute or chronic nephritis, all cases in which you find blood in the urine, and all other doubtful cases to the Medical Advisory Board.

Registrants with gonorrhoea or syphilis should be advised to accept treatment pending receipt of orders to report for duty.

(*n*) *Affections Common to Both Extremities.*—*Reject* all diseases, injuries and amputations which have destroyed the function of *both* lower limbs or *both* upper limbs.

Reject all registrants with an extensive disease of one joint associated with sinuses of long duration.

Accept all registrants who have no loss of function of both upper and lower extremities and no restriction of joint function.

Refer to the Medical Advisory Board all registrants with one good arm and one good lower extremity and all other doubtful cases.

(*o*) *Hands.*—Accept all registrants whose function of the wrist and fingers is not permanently impaired and who have not lost either a thumb or the index finger on the right hand, or two fingers on one hand.

Refer all other and doubtful cases to the Medical Advisory Board.

(*p*) *Lower Extremities.*—Accept all registrants with movable joints and no deformity which interferes with walking and weight-bearing power.

Accept registrants with varicose veins when not associated with edema and leg ulcer.

Accept all foot and ankle lesions, if they do not interfere with the wearing of an ordinary shoe and with walking and weight-bearing power; hammer toe, hallux valgus, bunion, callosities, the different types of flat-, club- and claw-foot are to be accepted if they come within the above requirements.

Refer all doubtful and other cases to the Medical Advisory Board.

Reject no foot cases.

(*q*) *Height, Weight, and Chest Measurements.*—Registrants whose chest measurements do not come within the limits of the table and who have no disqualifying defect are referred to the Medical Advisory Board.

Accept registrants above 58 inches in height when exceptionally well proportioned. Refer all other cases to the Medical Advisory Board.

Reject registrants of less than 58 inches in height.

Refer to the Medical Advisory Board registrants whose height is more than 58 inches and less than 60.

Reject registrants whose weight is less than 100 pounds unless it is plainly due to some recent illness and otherwise the registrants have no disqualifying defect.

Registrants whose weight is more than 100 pounds and less than 114 pounds and who have no other disqualifying defect are referred to the Medical Advisory Board.

Registrants under weight in proportion to their height (see table), unless it is plainly due to some temporary cause, are

referred to the Medical Advisory Board. When this underweight can reasonably be explained and the registrant otherwise is physically fit, *accept*.

Registrants with overweight are to be *accepted* unless the obesity interferes with normal physical activity. Refer all doubtful cases to the Medical Advisory Board.

The following weights and measurements should be taken with the greatest care:

STANDARD MEASUREMENTS, AND PERMISSIBLE VARIATIONS

A Standard Accepted Measurements				The Following Variations from the Standard Shown in Column A are Permissible When the Applicant is Active, Has Firm Muscles, and is Evidently Vigorous and Healthy			
		Chest Measurement				Chest Measurement	
Height, Inches	Weight, Pounds	At Expiration, Inches	Mobility, Inches	Height, Inches	Weight, Pounds	At Expiration, Inches	Mobility, Inches
60	120	31	2	60	114	30	2
61	120	31	2	61	114	30	2
62	120	31	2	62	114	30	2
63	124	31	2	63	116	30	2
64	128	32	2	64	120	30	2
65	130	32	2	65	120	30	2
66	132	32½	2	66	120	30¼	2
67	134	33	2	67	120	30½	2
68	141	33¼	2½	68	121	30¾	2
69	148	33½	2½	69	124	31	2
70	155	34	2½	70	128	31¼	2
71	162	34¼	2½	71	133	31¾	2
72	169	34¾	3	72	138	32¼	2½
73	176	35¼	3	73	143	32¾	2½
74	183	36¼	3	74	148	33½	2½
75	190	36¾	3¼	75	155	34½	2¾
76	197	37¼	3½	76	161	34¾	2¾
77	204	37½	3¾	77	168	35¼	3
78	211	38¼	4	78	175	35¾	3

(*r*) *General.*—Refer to the Medical Advisory Board all registrants who, from their history and after their complete examination, suggest the possibility of tuberculosis in some part of the body.

Refer to the Medical Advisory Board all cases who, at the general examination seem to have a marked anaemia even though otherwise physically fit.

Refer to the Medical Advisory Board all cases who, after examination impress you as in an extreme state of debility, even if the other examinations are negative.

Refer to the Medical Advisory Board all registrants who give a history of an operation or any other treatment for a malignant tumor, even if there is no evidence of recurrence, and all registrants who, after examination, have any tumor or ulcer suspicious of malignancy.

Registrants confined to their homes, hospitals, or institutions, who claim to be suffering from hopeless, totally incapacitating diseases, should be thoroughly investigated by the Local Board in consultation, if necessary, with the Medical Advisory Board.

Some of these registrants may have remediable defects. In others, the claim may be incorrect.

Section 185. Dental Requirements.—*Accept* registrants who have three serviceable, natural, masticating teeth above and three below opposing and three serviceable, natural incisors above and three below opposing. All these teeth must be so opposed as to serve the purpose of incision and mastication. Therefore, the registrant shall have a minimum total of six masticating teeth and a minimum total of six incisor teeth.

The needed dental treatment will be performed at the cantonment. However, if time permits, a registrant, if he prefers, may have the necessary work done at home previous to his induction into military service.

Definitions.—(*a*) The term "masticating teeth" includes molar and bicuspid teeth, and the term "incisors" includes incisor and cuspid teeth.

(*b*) A natural tooth which is carious (one with a cavity), which can be restored by filling, is to be considered as a natural serviceable tooth.

(*c*) Teeth which are restored by crowns or dummies attached to fixed bridge work, when well placed, shall be considered as serviceable natural teeth, when the history and the appearance of these teeth is such as to clearly warrant such assumption.

(*d*) A tooth is not to be considered a serviceable natural tooth when it is involved with excessively deep pyorrhea pockets, or when its root-end is involved with a known infection that has or has not an evacuating sinus discharging through the mucous membrane or skin.

Refer all other cases to the Medical Advisory Board.

No registrants can be rejected on account of teeth defects.

Section 186. Degree of Deficiency for Disqualification.—In these regulations the standards for unconditional rejection which place the registrant in the class physically deficient and not physically disqualified for military service are clearly defined, When the Local Board is in any doubt, the registrant should be referred to the Medical Advisory Board. The physician on the Local Board is requested to read paragraph 3 of Section 123, page 64 after the side heading *Where Held Disqualified*, which is as follows: If the registrant is held to be physically disqualified by the examining physician, the Local Board shall, unless it decides by unanimous vote that the disqualification is so obvious as to leave no room for reasonable doubt, send the registrant before such Medical Advisory Board in the manner just provided. This shows that there must be a unanimous vote of the Local Board to disqualify the registrant, and the disqualification must be so obvious as to leave no room for reasonable doubt.

The object of this ruling has already been given.

Section 187. Temporary Defects.—Registrants confined to their homes, or hospitals, or who present themselves with some temporary defect the result of an acute disease, injury, or operation, or who are waiting for operation, should be granted a reasonable delay for completing the physical examination.

All of those cases should be thoroughly investigated by the physician on the Local Board.

Registrants with contagious, communicable, reportable diseases should be ordered before the Local Board for examination until they are discharged by the Boards of Health.

Registrants recovering from diphtheria should be ordered to the cantonments until two negative cultures have been obtained from the throat. In localities where there is no provision for this bacteriological work, consult the Medical Advisory Board.

Section 188.—Special and Limited Military Service.—In view of the importance of a thorough investigation and classification of registrants belonging to this group, it has been considered best to request the Local Board to refer all of these registrants to the Medical Advisory Board.

The physician on the Local Board is urged to consult with the Medical Advisory Board about this group and familiarize himself with the specific regulations and information soon to be given to the Medical Advisory Board concerning special and limited military service.

HEALTH CONDITIONS IN EXPEDITIONARY FORCES AND TROOPS IN THE UNITED STATES

Week Ending January 18

The accompanying figures on health conditions in the American Expeditionary Forces for the week ending January 18 are from reports cabled to the Surgeon-General of the Army. Similar figures are given for all troops in the United States. Figures in second line are for the preceding week.

The "admission rate" in these figures is the number of new cases per thousand men first reported during the week covered by the report. The "noneffective rate" is the total number per thousand off duty as the result of any injury or ailment, whether or not the patient was ordered to hospital.

HEALTH CONDITIONS IN THE UNITED STATES ARMY

	Expeditionary Forces	Troops in United States
Noneffective rate on January 18	55.1	47.6
Noneffective rate on January 11	54.1	46.4
Admission rate:		
Injury and disease	44.9	33.3
	45.2	33.7
Disease only	42.3	32.0
	42.0	32.2
Pneumonia	1.6	0.6
	1.0	0.7
Venereal disease	1.4	1.4
	1.1	1.4
Measles	1.2	2.1
	1.5	2.0
Meningitis	0.1	0.08
	0.05	0.09
Scarlet fever	0.3	0.2
	0.5	0.1
Typhoid fever	0.004	0.0008
	0.01	0.001

NOTE.—Figures above represent rate per thousand.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

Extracts from Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending Jan. 18, 1918

1. Annual admission rate per 1,000 all troops in U. S. (disease only) 1,666.7
   Noneffective rate per 1,000 on day of report..... 47.6
2. National Guard Camps:
   Admission rate per 1,000 all divisions (disease only)..... 1,567.8
   Noneffective rate per 1,000 on day of report..... 49.1
   Divisions showing admission rate for disease higher than average: Camps Wheeler, Beauregard, Kearny, Bowie, Shelby and Doniphan.
   Divisions showing noneffective rate higher than average: Camps Wheeler, Beauregard, Bowie, Kearny, Shelby and Doniphan.
3. National Army Camps:
   Annual admission rate per 1,000 all divisions (disease only) 1,905
   Noneffective rate per 1,000 on day of report (all divisions) 51
   Divisions showing admission rate for disease higher than average: Camps Travis, Pike, Dodge, Jackson, Funston and Lee.
   Divisions showing noneffective rate higher than average: Camps Travis, Dodge, Pike, Lee, Funston, Jackson, Zachary Taylor and Lewis.
4. Venereal Diseases:
   Annual admission rate Regulars in U. S..... 76.2
   Annual admission rate National Guard (Divisions in U. S.).. 46.6
   Annual admission rate National Army (Divisions in U. S.).. 90.3
   National Guard camps having rate above average: Camps Logan, Bowie, Wheeler, Shelby and McClellan.
   National Army camps having rate above average: Camps Pike, Dix, Dodge, Travis and Jackson.
5. Number of cases of pneumonia 710
   Highest number in any one camp (Travis) 73
   Number of cases of meningitis 86
   Highest number in any one camp (Jackson) 14

6. NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING JAN. 18, 1918

Divisions	Pneumonia	Dysentery	Malaria	Venereal	Paratyphoid	Typhoid	Measles	Meningitis	Scarlet fever	Deaths	Noneffective per 1,000 on day of report
Wadsworth	6	...	...	25	..	..	27	..	1	3	31.5
Hancock	14	...	...	11	..	..	10	..	..	0	27.1
McClellan	7	...	...	21	..	..	27	..	1	1	37.6
Sevier	15	...	...	13	..	..	17	3	..	3	38.2
Wheeler	37	...	3	27	..	..	..	1	..	11	89.5
Logan	14	...	1	85	..	..	40	..	3	1	31.5
Cody	29	...	...	6	..	..	4	..	1	9	43.6
Doniphan	21	...	1	14	..	..	51	..	..	9	54.3
Bowie	20	...	...	42	..	..	1	..	..	5	69.0
Sheridan	4	...	...	14	..	..	38	..	..	2	31.1
Shelby	10	...	...	28	..	..	4	..	..	2	58.1
Beauregard	31	...	4	9	..	..	...	13	..	16	87.9
Kearny	6	...	...	8	..	..	19	4	18	4	61.2
Devens	5	...	...	22	..	..	73	1	1	4	36.9
Upton	8	...	...	4	..	..	5	1	1	4	28.3
Dix	1	...	...	76	..	..	27	..	1	1	42.8
Meade	51	...	...	21	..	..	58	4	17	3	30.0
Lee	23	...	...	39	..	..	86	2	2	17	67.2
Jackson	15	...	2	34	..	..	43	14	..	11	56.1
Gordon	28	...	...	15	..	1	118	3	..	22	42.8
Sherman	3	...	...	26	..	..	152	..	33	3	41.5
Taylor	33	...	...	25	..	..	69	3	..	7	53.4
Custer	6	...	...	24	..	..	74	2	5	3	40.3
Grant	13	...	...	12	..	..	177	..	13	4	36.1
Pike	45	...	...	348	..	..	62	1	41	37	68.2
Dodge	7	...	...	36	..	..	67	1	5	3	74.8
Funston	6	...	...	6	..	..	58	2	3	8	67 1
Travis	73	...	...	55	..	..	8	4	..	17	91.0
Lewis	8	...	...	34	..	..	17	2	30	5	51.2

7. ANNUAL RATE PER THOUSAND FOR SPECIAL DISEASES

	Regulars, U. S. Army, in U. S. only, 1916*	Regulars in U. S., Week Ending Jan. 18, 1918	National Guard, All Camps, Week Ending Jan. 18, 1918	National Army, All Camps, Week Ending Jan. 18, 1918	American Expeditionary Forces, Week Ending Jan. 18, 1918
Pneumonia	2.59	23.7	34.4	38.0	82.2
Dysentery	3.97	1.6	0.0	0.0	1.1
Malaria	12.52	0.4	1.4	0.2	0.2
Venereal	91.23	76.2	46.6	90.3	74.3
Paratyphoid	0.31	0.0	0.0	0.0	0.2
Typhoid	0.21	0.0	0.0	0.1	0.2
Measles	20.28	126.8	36.6	127.4	63.4
Meningitis	0.29	3.9	3.2	4.9	5.7
Scarlet fever	0.59	8.6	3.7	17.6	18.4

* Enlisted men only, both white and colored.

CARDIOVASCULAR AND TUBERCULOSIS EXAMINATION

At a meeting of the Philadelphia County Medical Society, held January 9, several reports on cardiovascular and tuberculosis examinations in various camps were presented.

THE TUBERCULOSIS EXAMINING BOARD AT THE ALLENTOWN CAMP

Lieut. Rae S. Dorsett reported that examinations for tuberculosis at the Allentown camp were conducted by a board consisting of Drs. John J. Robrecht, William S. Wray, Robert G. Torrey, Louis Jurist, Albert E. Blackburn and Rae S. Dorsett. Two hundred and twenty officers were examined, of whom five were found to have active tuberculosis. Of the 5,293 men examined, eighteen had tuberculosis. At the time of the examinations, the board could only recommend to the disability board at the camp, and the disability board saw fit to keep some of these men in service, hoping to improve their condition. Further treatment in four instances proved to be unavailing, and the men were subsequently discharged. One cannot but feel that had the disability board acted promptly on the suggestions of the tuberculosis board, the government would have been saved a measure of expense.

EXAMINATION OF MEN AT FORTS NIAGARA AND GETTYSBURG

Lieut. A. A. Eshner, a member of the tuberculosis and cardiovascular board, said that 2,000 men were examined in the First Reserve Officers' Training Camp at Fort Niagara, and at Gettysburg approximately 2,200, including, in addition to candidates, a certain number of national guardsmen, artillerymen, quartermasters' men, men on detached service and others. Only a few cases of active tuberculosis were found, and only a small number of cases of disqualifying cardiovascular disease. At Gettysburg, more than 10,000 enlisted men were examined, including twenty-nine with active tuberculosis and sixty-two with disqualifying cardiovascular disease. Lieutenant Eshner called especial attention to the large number of cases in which a murmur was audible in the third left intercostal space near the sternum, often transmitted obliquely upward to the left. He was disposed to attribute this to physical changes of an undetermined character induced in structures at the base of the heart in consequence of the great physical activity to which the men were subjected in the course of their training. He believes also that a third sound or even a well developed presystolic murmur could be generated as a result of temporary or permanent derangement in the relations between the left auricle and ventricle and the mitral orifice, whether in consequence of actual antecedent disease or from abnormal functional demands.

EXAMINATION OF THE SIXTH INFANTRY, N. G. P., IN PHILADELPHIA IN AUGUST, 1917

Dr. Herman B. Allyn said that this examination, which was part of a general examination of all the National Guard stationed in Philadelphia, was in charge of a tuberculosis board of which Captain, now Major Siner, was president. Dr. Allyn and Dr. John A. O'Connell were assigned to the examination of that portion of the Sixth Infantry stationed in Philadelphia. Their instructions were explicit. They were to recommend the rejection of men with active tuberculosis, as determined by the presence of râles, but were to retain in the service those having old or quiescent lesions. Perhaps it was felt by some that a wider latitude allowed the examiner would have resulted in weeding out some who were not likely to render good service in the Army. Fortunately there was the disability board, so that those who were recommended for discharge by the board were, so far as the examiners knew, all dismissed from the service. Drs. Allyn and O'Connell examined 766 men, among whom were found eleven with tuberculosis and twenty-five with heart disease. Some of these were recommended for discharge and others were referred to the regimental surgeon. Dr. Allyn believes that it would be better in any subsequent examination to keep a record in duplicate on filing cards of every man in whom anything abnormal is found.

EXAMINATIONS MADE IN CAMPS AND ARMORIES IN PHILADELPHIA, GETTYSBURG, WASHINGTON AND TEXAS

Capt. A. C. Morgan reported that the board of examiners for tuberculosis and cardiovascular disease, of which he was a member, examined 6,308 men in Philadelphia and vicinity during August and September, 1917. There were found in

this number thirty-two with tuberculosis, only nine of whom were discharged from the Army. The remainder, showing small arrested lesions, and with otherwise good physical condition, were recommended for retention in the service. There were discharged from the service fourteen men with valvular heart disease, two with adherent pericardium, and one with chronic nephritis with marked arterial hypertension. The work at Gettysburg was in the nature of a study of recalled patients and review of recruits sent down from Harrisburg and other recruiting stations. On one occasion over 50 per cent. of the recruits were rejected. Herein, Captain Morgan believes, lies a great weakness of the Army. Were highly trained medical men to pass on applicants at recruiting stations, the need for specialists in the Army would be very greatly decreased. In the technic insisted on by Col. G. E. Bushnell, when persistent moist râles are present, negative sputum examinations and roentgen-ray findings are not to be given preference, this sign being deemed of sufficient importance to establish diagnosis of active pulmonary tuberculosis, and to justify dismissal from the service. At Waco, nearly 12,000 men from Wisconsin and Michigan were examined. A remarkable finding was that of a great number of cases of hyperthyroidism, many of large size. Many showed cardiac murmurs. A few had tremors and tachycardia, while only a small number presented scars from operative treatment. Five hundred and ninety patients were referred to the cardiovascular board. While no classified table was made, there were apparently an unusually large proportion of cases of aortic regurgitation. The majority of the patients presented a history of acute articular rheumatism. Twenty-seven were referred to the psychopathic department; twenty-five to the orthopedic, and forty-five to the nose and throat departments. Five cases of asthma were discovered. Asthma should undoubtedly exclude the subject from service. In relation to administrative problems, Captain Morgan said that in Army circles, when one is expecting orders or information, one should be content with the apparent slowness of various procedures and, to use the Army phrase, "sit tight" until orders come through.

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

JAN. 25, 1918.

The cold rains of this week added to our already high sick report. Even mumps, which had been decreasing, took a new jump. Pneumonia always increases with bad weather. Also a few cases of meningitis suddenly cropped up. Drills and outdoor work were almost entirely suspended during the cold, rainy days. Better weather was followed by a marked lowering of the sick report.

Lieutenant-Colonel Weed, M. C., from the Surgeon-General's Office, inspected the camp, Monday and Tuesday. He happened to be here during the worst weather of the year, so that it was difficult to get about the camp.

Major Lund of Boston has arrived to take charge of the surgical department at the base hospital, replacing Major Cole, who is now with an evacuation hospital at Fort Riley, preparing for France.

Pneumonia convalescents are being sent to the Fort McPherson hospital weekly. They return after four or five weeks' stay there.

Meningitis carriers are now being treated in the gas house, with a weak chlorin gas. This experiment is being watched with much interest. If it will clear up the carriers quickly, it will be of the greatest assistance.

BASE HOSPITAL NOTES

A new building for the nurses has been started northeast of the present quarters and fronting the Macon road. This in conjunction with their present quarters will be amply sufficient for the nursing forces, relieving the present crowded condition. Three additional wings are to be added to the officers' quarters, doubling their capacity. The middle wing will be used as an assembly room, dining room and kitchen, the officers' mess being in the quarters instead of the general mess hall, as at present. Ground has been broken for a large septic tank to be used in connection with the sewerage from the hospital until the pipe line built by the city of Macon is completed and connected with our sewerage system.——Ordinary house mice are being utilized for pneumonia type determination by the laboratory forces. The experiment was tried on account of the great difficulty experienced in obtaining white mice.——There are at present in the hospital under treatment only about 850 patients.——An antimosquito campaign is being inaugurated by the city of Macon in cooperation with the sanitary forces of the camp. It was discovered last autumn that unless antimosquito work was done outside of the camp, the work done inside would not be effective; hence, the combination of forces.

ONE HUNDRED AND SIXTH SANITARY TRAIN

The examinations of the officers of the train in the drill regulations last week were very satisfactory. The increment of equipment during the past few days, brings us steadily nearer the goal of complete equipment.——Major George F. Keenan, commanding the One Hundred and Sixth Sanitary Train, returned from detail escorting the remains of the late Major Augustus P. Gardner to Washington, and has resumed command.——Lieut. Thomas A. Gaines of the One Hundred and Third Field Hospital has been on leave of absence for the past few days owing to a death in the family.——Lieut. Joseph T. Banks, the genial adjutant of the field hospital section, is convalescent at the base hospital from a severe attack of bronchitis.——Major Cornelius F. Holton insists that his newly reconstructed bungalow surpasses anything in the train.

Thirty-Eighth Division, Camp Shelby, Hattiesburg, Miss.

JAN. 23, 1918.

INFECTIOUS DISEASES

This division has passed through what it believes and hopes to be the worst of its troubles on this side, in that the measles epidemic is over, or very nearly so. In all, about 2,000 cases were treated, the most under treatment at any one time being 664, and the highest admission rate for any one day being 84.

Measles came with the drafted men from Camp Taylor, and spread with lightning rapidity. It started the first of November and died out the last of December. We were somewhat taxed for a while to care for the patients, but by utilizing all the ward tentage from field hospitals, together with the laundry, shop, guard house and garage at the base hospital, we just about came out even. All this tentage was systematically arranged at the base hospital, floored and electrically lighted, and patients made comfortable on spring beds. Telegraphic requests for additional bedding were acted on very promptly, and shipment was expedited by express. All patients were admitted to the base hospital, which furnished female nurses, food and supplies, and was assisted by the personnel of Field Hospital No. 150. This system worked very satisfactorily and without confusion. Mumps patients were likewise admitted to this tent hospital.

PNEUMONIA

Two hundred pneumonia patients have been admitted to the base hospital, the majority having bronchopneumonia following measles. There have been in all, fifty-two deaths from pneumonia, thirty-two of which were from bronchopneumonia.

MENINGITIS

Meningitis has never reached alarming proportions in this camp, there having been in all twenty-four cases, extending over a period of 100 days. Eight of these cases were in one regiment, and the remainder widely scattered. With the infection present, all concerned are constantly apprehensive, feeling that it is not impossible for a sharp rise in the incidence of these cases. Since the first case, the longest non-incidence has been three weeks. In the twenty-four cases of the epidemic meningitis, there have been four deaths.

MUMPS

Mumps is still with us, as they have been for three months, showing beautiful curve rises of about eighteen days' interval, and little sign of abating. There are at present 330 patients under treatment. Aside from padding the sick report and increasing the noneffective rate, these cases are of minor importance, and have few complications.

BASE HOSPITAL

As our base hospital is for only 500 beds, it has been overcrowded, with an average of over a thousand cases for the past two months. Ten additional wards are now being constructed, and sewerage and plumbing have been authorized, so that conditions will be materially improved. A unit equipment for the twelve regimental infirmaries has been provided, converting each unit into a twenty-bed hospital. This has relieved the base hospital a great deal, and is working very well.

LYCEUM WORK

The medical officers' lyceum, Monday and Thursday nights each week, for all officers, including those of the base hospital, continues with interest. Monday night is devoted to military matters and Thursday night to professional work. At the last regular meeting, bacteriology of throat examinations

was reported by Captain Sanderson, and Captain Fowler gave a splendid report with roentgenographic pictures of thirty-six operative cases of mastoiditis. Perhaps it is of passing interest to state that mastoiditis has been epidemic in this camp, and about sixty patients have been operated on. Most of these followed measles.

PERSONAL NOTES

The sanitary squads, in charge of Lieutenants Traubue and Kyte, have been organized, and are busy with instruction and applied sanitation. The mobile veterinary section and the separate units are likewise organized, and Major Peters has reported as division veterinarian.——The division sanitary inspector, Lieutenant-Colonel Carter, was recently ordered to Newport News as division surgeon, and is greatly missed. Major Green, formerly surgeon of the One Hundred and Fifty-second Infantry, has succeeded him.——Colonel Weed visited this camp last week as sanitary inspector from the Surgeon-General's Office, and the week before we had Colonel Ashburn and Major Welch. The latter attended one of the regular lyceum meetings, and both gave interesting talks.——Colonel Blanchard, the division surgeon, spent two days last week at Camp Beauregard, studying health conditions.——Major Hellman, the division dental surgeon, has gone to St. Louis to take an examination for his majority.——Major Crawford, head of the surgical service, is in New York on postgraduate work, and eight officers from the sanitary train are attending a fracture course in New York and Pittsburgh.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

JAN. 21, 1918.

PHYSICIANS SERVING AS PRIVATES

Herman W. Smelzer of Connersville, Ind., a graduate of the Indiana University School of Medicine in 1916, arrived here in the draft, October 6, and was assigned to the Three Hundred Thirty-Fifth Infantry. He has just received his commission as a first lieutenant in the Medical Reserve Corps.

Dr. Floyd V. Kilgore, a graduate of the University of Louisville Medical Department, had taken the examination for a commission in the Medical Corps, which was received a short while before he left for Camp Taylor to respond to his notice from the draft board to report as a private at Camp Taylor. He had the unique distinction of holding a commission in the Medical Corps of the Army as first lieutenant while serving as a private, and was unable for several days to have his status straightened out, as his draft notice took precedence over his commission.

COURT MARTIAL

A first sergeant has been found guilty by a general court martial of improper language to a superior officer and refusing to stay in the base hospital, where he was being treated, and for disobeying orders given by Major Walter Hamburger. He was sentenced to be reduced to the ranks and confined for six months at hard labor, and to forfeit half his pay for that period of time.

CAMP LIBRARY

The camp library was opened January 16, with addresses by Governor Stanley, Mayor George Weissinger Smith, and Brigadier-General Wilder, acting commander of the division. There are 12,000 books in the library, and they will be distributed as is done by the free libraries of the city. Librarian George T. Settle of the Louisville Free Public Library will have general direction of the camp library. Mrs. Cale Young Rice, the author, will have charge of the distribution of books to the patients in the base hospital, and each Y. M. C. A. building will be a distributing point.

The new camp theater, the largest building at the cantonment, was opened January 21 by the Cincinnati Symphony Orchestra with Victor Herbert as leader. This organization was booked for January 12, but could not come owing to the railroad tie up.

INSPECTION

Col. W. P. Chamberlain, medical inspector from the Surgeon-General's Office, made an inspection of the base hospital last week. He went through every department, including wards, laboratories, operating rooms, kitchens, dining rooms and dormitories.

Immediate measures will be taken to increase the heating facilities at the base hospital. Two more boilers are to be added to the heating plant to relieve the situation. It is believed that this remedy will increase the power of the apparatus so that it will be sufficient to heat the entire hospital adequately under the most severe weather conditions. During the frigid temperature the past month, it was found impossible to maintain a proper temperature in all departments with the steam heaters. Stoves were put in the receiving ward and other places to meet the emergency. The Red Cross donated a number of coal oil stoves to the hospital, and for a time these were used in the administration building; later, rigid orders were issued putting them under the ban as a precaution against the fire hazard, it being feared that an explosion of one of the stoves might cause a serious conflagration.

SICK AND INJURED

The report of the sick and injured at the camp for the week ending January 18 reveals: 1,299 sick and 40 injured; of these, 90 were sick of pneumonia; 2 of diphtheria; 74 of venereal diseases; 1 of smallpox; 1 of typhoid; 218 of measles; 15 of cerebrospinal meningitis, and 1 of scarlet fever. There were seven deaths caused thus: Lobar pneumonia, 3; bronchopneumonia, 1; acute appendicitis, 1; empyema, 1; cerebrospinal meningitis, 1. The strength of the command is 25,075.

PERSONAL NOTES

Announcement of the promotion of four medical officers at the base hospital has been made: First Lieut. John B. Richardson, Jr., of Louisville, has been promoted to a captaincy. He is in charge of ward 4c of the surgical division of the hospital.——Captain Herbert Fox of Philadelphia has been given his majority. He has charge of the laboratory of the hospital. He reported here for duty in September as a first lieutenant, and was promoted twice since then. He was formerly connected with the University of Pennsylvania.——First Lieut. George D. Marshall, orthopedist and member of the reviewing board, is now wearing his double bars as a captain. His home is in Kokomo, Ind. Captain Marshall has made some beautiful orthopedic instruments, and is a skilled metal worker.——First Lieut. Paul B. Coble of the nose and throat section has received his commission as a captain. He is a member of the board examining the candidates for aviation service. His home is in Indianapolis.——Recommendations for these promotions had been made by Lieut.-Col. John H. Allen, division surgeon, and approved by Brigadier-General Wilder, acting division commander, and forwarded through military channels to the War Department at Washington.

JAN. 28, 1918.

PHYSICAL EFFICIENCY TEST

The medical arm of the service at Camp Zachary Taylor is to be the first to feel the effect of the new order calling for rigid physical examinations and tests of every officer on duty at the camp. The following officers have been appointed to sit as a board for physical examination: Major Charles J. Imperatiori, Three Hundred and Ninth Sanitary Train; Capt. F. S. O'Hara of the division surgeon's office, and Captain Jordan of the Three Hundred and Ninth Sanitary Train. Major Luther R. Poust, the division sanitary officer, is to be the pace maker of the tests which are to begin within a week. Major Poust is now making his plans to put the medical men to the test of walking. They will first be taken on what is known as tactical walks, and then they will be taken on long hikes. Those who do not succeed in standing the examinations or tests that are to prove them fit for service in France will in all probability be left at Camp Zachary Taylor for medical duty with the next division. General Pershing has recommended to the War Department that no officer be sent him in France who is over 45 years old, but the latest information from Washington is that the department has not looked on this suggestion with favor, and has not acted on it.

RESTAURANTS UNDER THE BAN

Recommendations have been sent the division commander of Camp Zachary Taylor by the sanitary inspector's office of the U. S. Public Health Service that soldiers and men in uniform be barred from eating in or entering twenty-one restaurants, or eating houses in the city, as a result of the proprietors failing to obey the sanitary regulations. This order was issued today, and military police will visit these places and see that no soldiers enter. On the list are three well known restaurants which the military authorities say have disregarded the advice of the sanitary inspectors and have not even answered letters sent them by Division Surgeon Allen and chief medical officers at the camp.

DISEASE INCIDENCE

For the week ending January 25, there were in the National Army 1,250 treated during the week, including 28 injuries, 88 cases of pneumonia, 2 of diphtheria, 103 venereal cases, 2 of

smallpox, 1 of typhoid, 209 of measles, 12 of cerebrospinal meningitis, and 1 of scarlet fever. Seventy-three measles patients were discharged, leaving 136 sick at the end of the week. There were 3 deaths, 1 from bronchopneumonia, 1 from lobar pneumonia, and 1 from epidemic cerebrospinal meningitis.

In the Regular Army there were 319 cases under treatment during the week, including 3 injuries, 22 cases of pneumonia, 2 of diphtheria, 32 venereal cases, 50 of measles, 4 of cerebrospinal meningitis, and 2 of scarlet fever. There were 2 deaths, 1 from lobar pneumonia and one from bronchopneumonia.

PERSONALS

Lieut. Walter R. Leslie, M. R. C., has reported to the division surgeon and been assigned to the Three Hundred and Thirty-Sixth Infantry as medical officer.——Lieut. William Mann, Dental Reserve, on duty at the base hospital for some time, has been ordered to proceed to St. Louis for duty as a member of the board of officers convened for the examination of officers of the Dental Corps to determine their fitness for promotion.——Dr. Charles G. Lucas of Louisville has received notice that he has been commissioned a major in the Medical Reserve Corps, and assigned to the gastroenterologic section of a base hospital.——Miss Ethel May Miller of Milltown, Ind., is the first Red Cross nurse here to sustain injuries in the performance of her duties. She slipped and fell to the floor of a ward in the medical section and fractured her left forearm.——Capt. Matthew Neil of Sacramento, Calif., a veteran of the Spanish-American War, has arrived at the base hospital to become division supply officer. He will have charge of the distribution of medical supplies, not only to the base hospital, but also to veterinarians at the remount station and all other commands of the division. He will also begin shortly the training of twenty-six men to become medical supply men to be sent to France shortly.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

JAN. 21, 1918.

ORTHOPEDIC INVESTIGATION

A committee of orthopedic surgeons has just completed measuring the feet of 5,000 men of the Eighty-Ninth and Ninety-Second divisions. The purpose of this work is to furnish a table on which to base the percentage of different shoe sizes that will be necessary to equip the new Army. It has been found that the sizes which predominated in fitting the Regular Army in the past are too small for the men in the new Army, and large sizes are much in demand. The company commander of each organization is held responsible for proper fitting shoes on the men in his command. The proper method of measuring a soldier's feet for shoes consists in having him place one bare foot on an Army foot rule, lift the other foot from the ground, and carry a 40-pound sack of rock or bricks on his shoulder. The rule is then adjusted to the foot and the length size read off. A measurement with an inch tape is made around the ball of the foot at the same time, and the width in inches is read off. This is then compared with a table of widths, and the correct width thus ascertained. The shoe is then placed on the foot over the sock, the soldier again places his weight on it, and the person fitting the shoe pinches up the leather across the instep to see that it really does fit and is not too tight or too loose. This procedure is required by regulation, yet it has been found that many Medical Reserve Corps officers are not acquainted with it.

DISEASE INCIDENCE

The disease situation in this camp is improving, the percentage of noneffectives steadily decreasing. There have been but six cases of meningitis since the first of the year.

PSYCHIATRIC STUDY

A board of psychiatrists is now on duty here, and will examine the entire command. This board consists of Major Frederick H. Newberry, M. R. C.; Capt. William W. Eichelberger, M. R. C., and Lieuts. James K. Pollock, M. R. C., and Floyd W. Aplin, M. R. C. Major Newberry is president of the board.

TUBERCULOSIS EXAMINERS

The work of the special board of tuberculosis examiners is now completed so far as the examinations are concerned. Less than 1 per cent. of the division has been found suffering from this complaint. This board has also obtained a record of every man who has had measles since entering the service at this camp, which will be used for future reference with regard to the tuberculosis sequelae that may occur among them.

ORDERS TO OFFICERS OF THE MEDICAL CORPS

To Fort Myer, Va., for duty, Lieut.-Col. SAMUEL J. MORRIS.

To Camp Sheridan, Montgomery, Ala., as Divisional Psychiatrist, Major CHARLES W. STONE.

To Washington, D. C., Aviation Section, Signal Corps, for duty in the office of the Chief Surgeon, Lieut.-Col. NELSON GAPEN.

To Camp Travis, Fort Sam Houston, Texas, as commanding officer of the base hospital, Col. IRVING W. RAND.

To Fort Oglethorpe, Ga., for duty, Major WILLIAM H. ALLEN.

To Camp Wadsworth, Spartanburg, S. C., as commanding officer of the base hospital, Major WILLIAM R. DEAR.

To Camp Pike, Little Rock, Ark., as commanding officer of the base hospital, Col. JOSEPH T. CLARKE. As sanitary inspector, Major ALFRED P. UPSHUR. For duty, Major CHARLES E. FREEMAN.

To Camp Doniphan, Fort Sill, Okla., to make special sanitary inspection, and on completion *to his proper station*, thence *to Camp Bowie*, Fort Worth, Texas, and *to Camp MacArthur*, Waco, Texas, for the same purpose, and on completion *to his proper station*, Col. WILLIAM F. LEWIS.

To Camp Lee, Petersburg, Va., to inspect the genito-urinary venereal disease service and laboratory service, and on completion *to his proper station*, Col. FREDERICK F. RUSSELL.

To Rockefeller Institute, New York City, for instruction in laboratory work, Major CLARENCE L. COLE.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Army Medical School, Washington, D. C., for instruction, from Camp Meade, Capt. JOHN A. KEYTON, Dothan.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. NUCKOLS T. DAVIS, West Blockton.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. JESSE A. GOODE, Albertville.

To Fort Oglethorpe, for instruction, Lieuts. JAMES WILLIAMS, Jacksonville; CARL T. JONES, Mobile.

To Fort Riley, for duty, from Camp Sheridan, Capt. WILLIAM M. JORDAN, Birmingham.

To Oklahoma City, Okla., for instruction in orthopedic surgery, Lieut. HENRY B. BURDESHAW, Dothan.

To St. Louis, Mo., Washington University Medical School, for instruction, from Camp Wadsworth, Lieut. LEMUEL B. NICHOLSEN, Gadsden.

Alaska

To Western Department, for assignment to duty, Lieut. JAMES W. JOHNSTON, Sitka.

Arizona

To San Antonio, Texas, Aviation Section, Signal Corps, Kelly Field, for duty, Lieut. ROBERT W. DELL, Carriso.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Army Medical School, Lieut. JOHN F. LIEBERMAN, Pine Bluff.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JAMES W. BUTTS, Helena.

To Camp Shelby, Hattiesburg, Miss., for temporary duty, from St. Louis, Lieut. WALLACE D. ROSE, Little Rock.

To Camp Sheridan, Montgomery, Ala., for temporary duty, from St. Louis, Lieut. JOSEPHUS J. SHERRILL, Warren.

To Fort Riley, for instruction, from St. Louis, Lieut. MILES E. FOSTER, Fort Smith.

To his home and honorably discharged, on account of being physically disqualified for active service, Lieut. GEORGE A. CAUSEY, Swifton.

California

To Camp Bowie, Fort Worth, Texas, for duty, Lieut. FRANK A. WOODWARD, Los Angeles.

To Camp Fremont, Palo Alto, Calif., for duty, Lieuts. CLAUDE C. LEAVERTON, JOHN J. RICHSTEIN, San Francisco.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieuts. MARTIN J. SEID, CLYDE E. SHEDD, San Francisco.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. FRANK H. CHASE, Los Angeles.

To New York City, Cornell Medical College, for instruction in military roentgenology, Capt. GILBERT R. OWEN, San Bernardino.

To San Antonio, Texas, Kelly Field, for duty, Lieut. JAMES S. HALL, Los Angeles.

To St. Louis, Mo., Washington University, for instruction, from Douglas, Ark., Capt. CHARLES J. HARBECK, Hayward.

To Western Dept., for assignment to duty, Capt. LEMUEL A. ANTHONY, Novata; Lieut. CHANNING HALL, Alameda.

Colorado

To San Antonio, Texas, Kelly Field, for duty, Lieut. WILLARD J. WHITE, Longmont.

Connecticut

To Army Medical School, Washington, D. C., for instruction, Lieut. WILLIAM M. JOYCE, Middletown.

To Camp Devens, Ayer, Mass., for duty, from Army Medical School, Lieut. CORNELIUS S. CONKLIN, Ansonia.

To Camp MacArthur, Waco, Texas, Aviation Section, Signal Corps, for duty, Lieut. EDWIN P. SANBORN, Bristol.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. ELLIOTT H. METCALF, Rockville.

To Camp Sherman, Chillicothe, Ohio, for duty, from Camp Stuart, Major LOUIS I. MASON, Willimantic.

To Fort Leavenworth, Kansas, U. S. Disciplinary Barracks, for duty, from Fort Leavenworth, Lieut. HAROLD A. BANCROFT, Hartford.

To Fort Sam Houston, Texas, for duty, Capt. ANSELL G. COOK, Hartford.

District of Columbia

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. JOSEPH D. STOUT, Washington.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. ROY T. HASKELL, Washington.

To Fort Oglethorpe, for instruction, Capt. JOHN D. THOMAS, Lieuts. JOHN W. BURKE, SIDNEY C. COUSINS, PAUL S. PUTSKI, Washington.

To Lakewood, N. J., for temporary duty, from Camp American Univ., Major WILLIAM C. MOORE, Washington.

To Rockefeller Institute, N. Y., for instruction, from Camp Hancock, Lieut. EUGENE C. RICE, JR., Washington.

Florida

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capts. JOSEPH M. IRWIN, Crystal River; RALPH DUFFY, Lakeland.

To Camp Wadsworth, Spartanburg, S. C., for temporary duty, from St. Louis, Capt. FRANCIS A. H. MURRAY, Lake City.

To Fort Oglethorpe, for instruction, Lieut. ROBERT F. McDANIEL, Deland.

To Rockefeller Institute, N. Y., for instruction, Lieut. EMMET B. ANDERSON, Williston.

To San Antonio, Texas, Kelly Field, for duty, from Camp Bowie, Lieut. HARPER L. PROCTER, Jacksonville.

To Southeastern Dept., for assignment to duty, Capt. MALCOLM GUNN, Tarpon Springs.

To their homes and honorably discharged on account of being physically disqualified for active service, Lieuts. WILLIAM E. SHERMAN, Haines City; RICHARD LEFFERS, Lakeland; HERBERT W. COUNTS, Ocala.

Georgia

To Camp Jackson, Columbia, S.C., for temporary duty, from Camp Lee, Lieut. EVERARD A. WILCOX, Augusta.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieuts. JAMES M. COOK, Ellaville; ROBERT E. CORLEY, Hephzibal; HOMER A. DORSEY, Pitts.

To Fort Oglethorpe, for instruction, Lieuts. JAMES Q. FOLMAR, SIDNEY H. JACOBS, Atlanta; CARLTON J. WELLBORN, Blairsville; LE ROY W. RYDE, Fort McPherson; AUGUSTUS H. FRYE, Griffin; ELISHA P. BOMAR, Hephzibah; HENRY M. McGEHEE, Talbotton.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. ROLAND L. BROOKS, Geneva.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. CHARLES S. SMITH, Edison.

Hawaii

To Camp Taylor, Louisville, Ky., for duty Army Medical School, Lieuts. FREDERICK F. ALSUP, JOSEPH E. STRODE, Honolulu.

Idaho

To Camp Taylor, Louisville, Ky., for temporary duty, from St. Louis, Capt. ERWIN W. KLEINMAN, Hailey.

To Fort Riley, for instruction, Capt. JOHN E. WHITE, Twin Falls.

To his home and report by telegraph to the Surgeon-General of the Army, Lieut. EDGAR L. WHITE, Lewiston.

Illinois

To Army Medical School, Washington, D. C., for duty, from Army Medical School, Lieut. JOE H. ST. JOHN, Chicago. For instruction, Lieut. JOHN E. STANTON, Chicago; from Army Medical School, Lieuts. CARL W. CLARK, HARRY T. SWANSON, Chicago.

To Camp Grant, Rockford, Ill., for duty, from Army Medical School, Lieuts. ALFRED E. JONES, HENRY A. RASMUSSEN, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, Capt. GEORGE F. DICK, Evanston.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. HARVEY C. ASHER, Chicago.

To Fort Oglethorpe, for instruction, Capts. JOHN E. DOLAN, PAUL OLIVER, Chicago; Lieut. FRANCIS A. PHILLIPS, Xenia; from Camp Custer, Lieut. EDWIN S. GILLESPIE, Wenona.

To Fort Riley, for instruction, from St. Louis, Capt. FRANK C. SIBLEY, Carmi; for instruction, Lieuts. JOHN N. HOFFMAN, Champaign; BENJAMIN RAPPAPORT, Chicago; RUSSELL R. TOMBIN, Easton; FREDERICK M. PHILLIPS, Hulkeytown; JESSE H. ROTH, Kankakee.

To Lakewood, N. J., for duty, from Fort Riley, Capt. THOMAS J. O'MALLEY, Chicago.

To Rockefeller Institute, N. Y., for instruction, from Army Medical School, Lieut. THOMAS A. WAYLAND, Dallas City; from Fort Oglethorpe, Lieut. FREDERICK H. MAURER, Peoria.

To St. Louis, Washington University, for instruction, Lieuts. JOHN W. STEWART, Ewing; BYFORD H. WEBB, West Frankfort; in urology and dermatology, from Fort Benjamin Harrison, Lieut. ROBERT L. MORRIS, Decatur.

To Trenton, N. J., for duty, and upon completion *to his proper station,* Major PAUL B. MAGNUSON, Chicago.

To Williamsburg, N. Y., for temporary duty, Lieut. CHARLES S. PHALEN, Harvard.

To his home and to the inactive list, Major ALBERT J. OCHSNER, Chicago; on account of being physically disqualified for active service, Capt. FRANCIS M. EDWARDS, Centralia.

To their homes and honorably discharged on account of being physically disqualified for active service incurred prior to their entrance into the service, Lieut. HOMER S. WARREN, Chicago; EDWARD W. CUMMINS, Harrisburg.

Indiana

To Army Medical School, for instruction, Lieut. CECIL E. JOHNSON, Rensselaer.

To Camp Custer, Battle Creek, Mich., base hospital, from Camp Custer, Lieut. HARRY H. WARD, Coalmont.

To Camp Taylor, Louisville, Ky., from duty as a private at Camp Taylor, Lieut. EDGAR F. MAGENHEIMER, Evansville.

To Fort Oglethorpe, for instruction, Capt. CLAUDE C. CRUM, Jeffersonville; Lieuts. ARTHUR C. KNIGHT, Butte; CHARLES D. RYAN, Cross Plains; OLIVER C. BENNETT, Culver; BENJAMIN S. POTTER, Cumberland; WILLIAM C. MYERS, Dana; JAY H. GRIMES, Danville; EMERY P. SMALL, Decker; OLIVER E. GRIEST, Delphi; WESLEY M. HALL, East Enterprise; BLAINE A. BLOSSER, Fremont; ELBERT E. FREEMAN, Greentown; ARTHUR G. DOTY, HERMAN H. GICK, ROBERT ELDON REPASS, ELMO R. ROYER, WILLIAM L. ROYSTER, Indianapolis; GROVER C. PRICE, Judson; RICHARD L. RAIBOURN, Lynnville; THEODORE F. SEYMOUR, Michawaka; CHESTER A. MARSH, New Castle; KELLEY C. FITZGERALD, New Harmony; HARRY B. GUDGEL, Princeton; JOHN H. NILES, Seymour; OTT CASEY, JOHN E. FREED, Terre Haute; EARL E. JOHNSON, West Lebanon; JOHN S. ROBINSON, Winchester; from Camp Custer, Lieut. JULIUS J. GROSVENOR, Richmond.

To Fort Riley, for instruction, Lieut. HENRY V. LOGAN, Rushville.

To Rockefeller Institute, N. Y., for instruction, from Camp Dix, Lieut. KARL C. EBERLY, Fort Wayne.

To St. Louis, Mo., Washington Univ. Medical School, for instruction, from Camp Custer, Capt. FRANK H. KELLY, Argos.

Iowa

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. JOHN E. KILEY, Valley Junction.

To Camp Stuart, Newport News, Va., to examine the command in nervous and medical disease, from Philadelphia, Capt. SAMUEL C. LINDSAY, Independence.

To Fort Oglethorpe, for instruction, from Camp Custer, Lieuts. HARRY R. JENKINSON, Iowa City; HENRY L. McPHERRIN, Perry.

To Fort Riley, for instruction, Lieuts. LAURELL L. LUGAR, Corydon; JULIUS L. SHRYER, Durant; LAWRENCE L. CRAVEN, East Peru; LEE W. PRESCOTT, Sloan; HARRY F. RUBEL, Struble.

To San Antonio, Texas, Kelly Field, Aviation Section, Signal Corps, for duty, Lieut. ARTHUR E. SHAPPELL, Des Moines.

To his home and honorably discharged, Capt. ANDREW J. SWEZEY, Decorah.

Kansas

To Army Medical School, Washington, D. C., for instruction, from Camp Dodge, Lieut. ROY W. LAYTON, Kansas City.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieuts. EDMUND A. LODGE, Erie; RAYMOND O. DART, Kansas City; BENJAMIN F. FRAZER, Ossawatomie.

To Fort Riley, for instruction, Capt. FRANCIS F. CARTER, Seneca; Lieuts. CHARLES M. MILLER, Oakley; SAM M. MYER, Potter; from Fort Riley, Lieut. JOHN H. HANSEN, Elkhart.

To Rockefeller Institute, N. Y., for instruction, from Army Medical School, Lieut. DONALD R. BLACK, Rosedale.

To St. Louis, Washington University, for instruction, Capt. CLIFFORD C. NESSELRODE, Kansas City; Lieut. HUGH L. CHARLES, Atchison; from Fort Riley, RAYMOND H. MUNFORD, Dodge City.

Kentucky

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. BENJAMIN D. CHOATE, Louisville.

To Camp Hancock, Augusta, Ga., for duty, Lieut. EMMET F. HORINE, Louisville.

To Camp Taylor, Louisville, Ky., for duty, from Army Medical School, Lieuts. ARTHUR N. HENSON, FLOYD V. KILGORE, Louisville; from Fort Riley, Lieut. WALTER W. LESLIE, Lockport.

To Fort Riley, for duty, Lieuts. WILLIAM C. WORTHINGTON, Clintonville; HERMAN T. CARTER, Gilbertsville; FRANCIS G. AUD, CHARLES M. GARTH, JOHN C. ROGERS, Louisville; WASHINGTON L. BERRY, Washington; JAMES C. GRAHAM, Webbs.

To St. Louis, Washington University Medical School, for instruction, from Camp Sherman, Lieut. GARNETT BELOTE, Mayfield.

Honorably discharged, Lieut. MORRIS A. BLACKBURN, Louisville.

Louisiana

To Army Medical School, Washington, D. C., for instruction, Lieuts. TRUSS M. BRIETER, Bogalusa; JAMES C. WILLIS, JR., Shreveport.

To Camp Bowie, Ft. Worth, Texas, for temporary duty, from Fort Oglethorpe, Lieut. RUPERT M. BLAKELY, New Orleans.

To Camp Pike, Little Rock, Ark., for duty, Lieut. JOSEPH S. KOPFLER, Kenner.

To Ft. Monroe, Va., for the special examination of the command for tuberculosis, from Newport News, Lieut. DELANE S. CALHOUN, Ruston.

To Fort Oglethorpe, for instruction, Lieuts. WINFIELD N. FLOYD, New Orleans; PRESSLEY A. KIBBE, Vermilion Parish.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. CHARLES W. PHILLIPS, Colfax.

To St. Louis, Washington University, for instruction, Lieut. WILLIAM E. BALSINGER, New Orleans.

Maine

To Fort Oglethorpe, for instruction, Lieuts. HARRY. L. KILGORE, Belfast; WILLIAM H. KENNISON, Madison.

To New York City, for duty, Lieut. LESTER B. BRADFORD, Rockland.

Maryland

To Camp Beauregard, Alexandria, La., for temporary duty, from Camp Bowie, Lieut. KENNETH F. MAXEY, Baltimore.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Jackson, Capt. FRANCIS J. POWERS, Baltimore.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. JOHN C. WOODLAND, Crisfield.

To Fort Monroe, Va., for the special examination of the command for tuberculosis, from Newport News, Lieut. ISRAEL J. FEINGLES, Baltimore.

To Fort Oglethorpe, for instruction, Capt. CHARLES T. C. BUCKNER, Lieuts. CHARLES H. BURTON, Baltimore; JAY H. STIER, Perryman.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. VERNON S. WILKINSON, Aberdeen.

Massachusetts

To Army Medical School, Washington, D. C., for instruction, from Camp McClellan, Major EDGAR M. MEDLAR, Boston.

To Camp Bowie, Ft. Worth, Texas, for temporary duty, Lieut. HOWARD S. COLWELL, Worcester.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Leavenworth, Major CHARLES B. HOLLINGS, Boston.

To Camp Devens, Ayer, Mass., for duty, from Army Medical School, Lieut. WALTER L. PERRY, Worcester.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Dodge, ROGER W. SCHOFIELD, Worcester.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. WILLIAM V. KANE, Lynn.

To Camp Logan, Houston, Texas, base hospital, from Camp Logan, Lieut. RAOUL G. PROVOST, New Bedford.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. JOHN A. RANDALL, Myricks.

To Camp Wheeler, Macon, Ga., for temporary duty, from duty as Medical Aid to the Governor of the State of Massachusetts, Major FRED B. LUND, Boston. For duty, from Ridgewood, N. J., Lieut. FRANK C. LEAVITT, Belmont.

To Fort Leavenworth, Kan., U. S. Disciplinary Barracks, from Fort Leavenworth, Capt. RALPH M. CHAMBERS, Westboro.

To Fort Oglethorpe, for instruction, Lieut. HORMIDAS CHOGUETTE, New Bedford.

To Fort Riley, for duty, Capt. PAUL WITHINGTON, Boston.

To Hoboken, N. J., for duty, from Fort Myer, Major JAMES B. PASCOE, Fort Revere.

To New York City, for intensive training, Lieut. HENRY E. ST. ANTOINE, Jamaica Plains.

To St. Louis, Washington University Medical School, for instruction, from Camp Taylor, Capt. CHARLES L. UPTON, Shelburn Falls.

To Washington, D. C., for duty, in the Surgeon General's office, Lieut. HENRY L. MANN, Boston.

Michigan

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. Don C. Bartholomew, Detroit.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Pike, Lieut. Ray L. Fellers, Detroit; from Fort Riley, Lieut. FRANK W. BROWN, Bay City.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. ABRAHAM W. HUDSON, Detroit.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. EMILE C. HOULE, Negaunee.

To Camp Shelby, Hattiesburg, Miss., base hospital, upon completion of his present duties at Camp Shelby, Lieut. RAY S. MORRISH, Flint.

To Fort Riley, for instruction, Capts. WILLIAM H. MARSHALL, Flint; LOUIS H. CHAMBERLAIN, Grand Rapids; ARCHIE C. MAC KINNON, Lewiston; WILLIAM H. DUNHAM, Shaftsburg; Lieuts. EDWARD GOODWIN, Bay City; BURTON L. STEVENSON, Benton Harbor; RUDOLPH H. LAMBERT, Calumet; WILLIAM E. DORAN, Colon; Russell R. Huston, Copenish; LOWELL M. BUSH, Corruna; HAROLD F. CLOSE, BERNARD F. CORBETT, WILLIAM GRAMLEY, JAMES L. HAWKINS, ZENO L. KAMINSKI, ABRAHAM KAVINSKY, LADISLAUS R. MAMINSKI, LYMAN J. PINNEY, HARRY W. REED, PAUL C. ROHDE, WILLIAM G. SCHLEGELMILCH, ARTHUR R. SMECK, CLYDE R. VAN CUNDY, COLIN C. VARDON, Detroit; PAUL H. LIPPOLD, Escanaba; HARRY C. HACKMAN, Flint; OSCAR P. GEIB, Hubbardston; NELSON McLAUGHLIN, Lake Odessa; FORREST R. OSTRANDER, Lansing; WELLINGTON B. HUNTLEY, Lowell; JOHN F. KELLY, Manistee; EARL V. McCOMB, Menominee; HAROLD A. KIRKHAM, CHARLES A. MARTIN, Mount Clemens; ROBERT J. BEEBY, West Branch; ANDREW J. DINSMORE, White Pine Mine.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. JOHN J. O'LEARY, Ann Arbor.

To St. Louis, Mo., Washington University, for instruction, from Camp Grant, Capts. ELLSWORTH ORTON, Pontiac; HENRY J. MEYER, Saginaw.

To Washington, D. C., Camp American Univ., for duty, from Camp Greene, Capt. EMILE C. HOULE, Negaunee.

Minnesota

To Army Medical School, Washington, D. C., for instruction, Lieut. HARVEY W. SNYDER, Rochester.

To Camp Sherman, Chillicothe, Ohio, for temporary duty, from St. Louis, Lieut. LYNN J. WALKER, Wycoff.

To Camp Wheeler, Macon, Ga., for temporary duty, from St. Louis, Lieut. FRED F. STOCKING, Riverton.

To Fort Riley, for instruction, Capt. GEORGE M. SEWALL, Deerwood; Lieuts. PARKER L. BERGE, Brainerd; SAMUEL R. FRAKER, Cass Lake; HENRY E. BINET, Coleraine; JOSEPH H. COSGROVE, Duluth; ROY C. LOWE, Fairmont; HARRY E. McKIBBEN, Hector; HERBERT A. BURNS, Hutchinson; CHARLES D. RICHMOND, Jeffers; NATHAN F. DELEMON, Tintah.

To Park Field, Memphis, Tenn., Aviation Section, Signal Corps, from Park Field, Lieut. ALBERT J. WENTWORTH, Mankato.

Mississippi

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. GEORGE D. MASON, Clara.

To Fort Oglethorpe, for instruction, Lieuts. GRAHAM W. DIGGS, Black Hawk; CHARLES H. OTKEN, McComb; RILEY B. YATES, Sidon; JOHN H. STEEN, Vaughn.

To Lake Charles, La., Gerstner Field, for duty, Lieuts. BENJAMIN J. McRAE, Crandall; BATTON J. FARR, Holcomb; SAMUEL D. NEWELL, Indianola; BRYANT J. NEWITT, McComb; GEORGE C. COFFEY, Myrtle.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. SWINTON L. LANE, Scott.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. JAMES H. WHITE, Prairie.

Missouri

To Army Medical School, Washington, D. C., for instruction, from Washington, D. C., Lieut. CHARLES R. OZIAS, Kansas City.

To Camp Sherman, Chillicothe, Ohio, for duty, from Army Medical School, Lieut. ROLLO P. BOURBON, St. Louis.

To Camp Taylor, Louisville, Ky., for temporary duty, from St. Louis, Lieut. OWEN P. McPHERSON, Kansas City.

To Fort Oglethorpe, for instruction, from St. Louis, Capt. FRANK J. TAINTER, St. Charles.

To Fort Riley, for duty, Lieuts. FREDERICK H. BROWN, Billings; JOHN R. BRUCE, Marshfield; ANTHONY McCLORY, St. Louis; from Fort Riley, Lieut. SOLON E. HAYNES, St. Louis. For instruction, Lieut. GROVER C. McCORMACK, St. Louis.

To Jefferson Barracks, Mo., for temporary duty, from St. Louis, Capt. IRA R. CLARK, St. Louis.

To St. Louis, Mo., Washington University, for instruction, Capt. JAMES W. SHANKLAND, St. Louis; Lieuts. HOWARD O. LEINHARDT, North Kansas City; BERNHARDT W. KLIPPEL, St. Louis.

To his home and honorably discharged, on account of being physically disqualified for active service, Lieut. JOHN C. PHILSBAUM, St. Joseph.

Montana

To Camp Bowie, Fort Worth, Texas, for temporary duty, from St. Louis, Lieut. ROBERT L. REYNOLDS, Kalispell.

To Fort Riley, for instruction, Capt. GEORGE BERNHARD OWEN, Folsom.

Nebraska

To Fort Omaha, Neb., Aviation Section, Signal Corps, for duty, Capt. FREDERICK E. BRAUCHT, Coleridge; Lieut. JEREMIAH S. ALEXANDER, Omaha.

To Fort Riley, for instruction, Lieuts. WARREN M. PHILLIPS, Norfolk; EARL W. FETTER, North Platte; VERNARD A. LANPHIER, Sutton; when able to travel for physical examination to determine his fitness for active service, and on completion, *to his home,* Lieut. IRVIN C. MUNGER, Lincoln.

To San Antonio, Texas, Kelly Field, for duty, Lieut. WALTER W. COVELL, North Platte.

To his home and honorably discharged on account of physical disability incurred previous to entrance into the service, Lieut. CHARLES P. BREEN, Western.

New Hampshire

To Camp Sherman, Chillicothe, Ohio, base hospital, from St. Louis, Lieut. WALTER L. BARBOUR, Colebrook.

To Fort Logan H. Roots, Ark., for temporary duty, from Fort Oglethorpe, Lieut. GEORGE F. DWINELL, Manchester.

To Fort Oglethorpe, for instruction, Lieuts. EDWARD C. DURGIN, East Andover; HARRY C. WILLIAMS, Gilsum; ARTHUR L. WALLACE, Nashua; SAMUEL D. SNOW, North Conway; JAMES C. THOMPSON, North Stratford; LAWRENCE R. HATCH, West Jeffery.

To Fort Porter, New York, for duty, from Washington, D. C., Capt. ALBERT E. BROWNRIGG, Nashua.

New Jersey

To Army Medical School, Washington, D. C., for instruction, Lieuts. WILLIAM J. SUMMERS, Boonton; THOMAS M. MORRIS, Cranford; ALBERT C. HULETT, East Orange; DAVID S. CAREY, Freehold; LAWRENCE M. COLLINS, Greystone Park; THOMAS L. PELLETT, Hamburg; WILLIAM L. MADDEN, JOHN P. STOUT, Jersey City; HOWARD R. DUKES, Kearny; WILLIAM W. COX, Montclair; ROBERT N. MAC CUFFIE, Passaic; JACOB J. MANN, Perth Amboy; EARLE C. REYNOLDS, Rutherford; JOHN F. WEBER, South Amboy; CHARLESTON BATES, Summit.

To Camp Dodge, Des Moines, Iowa, for temporary duty, from St. Louis, Lieut. WILLIAM H. SMITH, Jr., Trenton.

To Camp Kearny, Linda Vista, Calif., for duty, from Presidio, Lieut. RUNKEL F. HEGEMAN, Somerville.

To Camp MacArthur, Waco, Texas, for the special examination of the command for tuberculosis, from Camp Pike, Lieut. WILLIAM H. HAINES, Audubon.

To Camp Sevier, Greenville, S. C., Aviation Mobilization Camp, for duty, Lieut. CORNELIUS V. CLOCK, Passaic.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. CHARLES BROWNE, Princeton.

To Fort Oglethorpe, for instruction, Capt. PHILIP G. HOOD, Manasquan; Lieuts. JOHN J. LETTIERI, Hoboken; JOSEPH A. BELOTT, Newark; GERDIE G. PATTEN, Pennsgrove.

To Fort Riley, as tuberculosis instructor from Fort Riley, Capt. RICHARD BEW, Atlantic City.

To Hoboken, N. J., for duty, Lieuts. MARMION S. BLACK, Elmer; ARCHER C. BUSH, Verone.

To Mineola, L. I., N. Y., Aviation Section, Signal Corps, Hazelhurst Field, for duty, Capt. HARRY M. ANDERSON, Allentown; FERDINAND G. ANGENY, Avon-by-the-Sea; Lieut. CHARLES J. MASSINGER, Butler.

To Oklahoma City, Okla., for instruction in orthopedic surgery, from Fort Clark, Lieut. RAWLEY W. WARD, Carneys Point.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieut. VIRGIL H. CORNELL, Cedar Grove.

New Mexico

To Camp Cody, Deming, N. M., for duty, Capt. EDWARD W. HOOPER, Silver City.

New York

To Army Medical School, Washington, D. C., for instruction, Capt. FRANKWOOD W. WILLIAMS, New York City; Lieuts. SYLVANUS J. NUNN, Bingham; JACOB WASHTON, Bronx; A. ARTHUR FELLER, JOSEPH LINTZ, JOHN J. YOUNG, Brooklyn; HARRY G. JOHNSON, EARL H. LERMOR, FRANK H. LONG, HAROLD J. McDONALD, FREDERICK E. SPERRY, Buffalo; VINCENT G. SMITH, Central Bridge; HOWARD B. SWAN, Chestertown; ROBERT G. WARD, Coney Island; FLOYD J. ATWELL, FRANK H. SNYDER, Geneva; MICHAEL A. ROGERS, Greenwich; WILLOUGHBY C. PENDILL, Huntington, Long Island; WILLIAM H. JOHNSON, Ilion; LOUIS M. PASTOR, Kings Park, Long Island; CYRUS W. CULVER, Lowville; WILLIAM J. RYAN, Newport; LEOPOLD ADAMS, HORACE E. AURINGER, THOMAS G. DAVIS, WALTER D. EDWARDS, STANLEY M. KING, JEROME A. McSWEENEY, LESTER L. ROOS, FREDERICK W. SCHAEFFER, New York City; JOHN P. SHARP, Niagara Falls; LLOYD T. McNULTY, Norwood; PHILIP W. DE GARMO, Rhinebeck; PAUL S. PERSONS, Ripley; MARTIN F. NOLAN, Tonawanda; from Army Medical School, Lieuts. WILLIAM J. CARROLL, WESLEY C. COX, JOSEPH W. SMITH, Brooklyn; WILLIAM S. McCANN, New York City; BENJAMIN J. SLATER, Rochester; from Atlanta, Ga., Lieut. STEPHEN H. CURTIS, Albany; from Fort Oglethorpe, Lieut. ROBERT A. CORBIN, New York City.

To Call Field, Wichita Falls, Texas, Aviation Section, Signal Corps, from Call Field, Lieut. BARNETT ARONSON, Brooklyn.

To Camp Beauregard, Alexandria, La., for temporary duty, from Camp Bowie, Lieut. ROBERT L. LEVY, New York City.

To Camp Custer, Battle Creek, Mich., for temporary duty, from St. Louis, Capt. HARRY R. STONE, New York City.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. HENRY DE W. DURYEA, Buffalo.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieuts. HAROLD V. RAYCROFT, Brooklyn; LEO E. REIMANN, Buffalo; HARRY B. HANSEN, New York City.

To Camp Grant, Rockford, Ill., for temporary duty, from St. Louis, Lieut. MAX BERNSTEIN, New York City.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. JAMES R. SWANICK, Saratoga Springs.

To Camp Jackson, Columbia, S. C., and *Camp Beauregard,* Alexandria, La., for special sanitary inspection, and upon completion to Washington, D. C., for instruction, from Rockefeller Institute, N. Y., Major SIMON FLEXNER, New York City; and upon completion to his home and the inactive list of the M. R. C., Capt. HAROLD L. AMOSS, New York City.

To Camp Logan, Houston, Texas, for temporary duty, from Camp Hancock, Capt. SAMUEL M. STRONG, New York City.

To Camp MacArthur, Waco, Texas, for the special examination of the command for tuberculosis, from Camp Pike, Capt. ROB R. McCULLY, Auburn; Lieut. FRANK J. HERBIG, Staten Island.

To Camp Sevier, Greenville, S. C., as division psychiatrist, from Camp Sevier, Capt. FRANCIS M. SHOCKLEY, Brooklyn Aviation Mobilization Camp, for duty, Lieut. JEREMIAH WEST, Stottsville.

To Camp Sheridan, Montgomery, Ala., for duty as orthopedic instructor from Camp Meade, Lieut. EDMUND B. SPAETH, Elmira.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. ALEXANDER F. ROBERTSON, Jr., Brooklyn.

To Camp Stuart, Newport News, Va., to examine the command in nervous and mental diseases, from Camp Dix, Major MENAS S. GREGORY, New York City; from Philadelphia, Lieut. HOWARD W. DAVIS, Schenectady.

To Camp Taliaferro Field, Fort Worth, Texas, Aviation Section, Signal Corps, from Camp Taliaferro, Lieut. ALBERT G. COOK, Brooklyn.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieuts. JOSEPH PRICE, ALRED A. SCHWARTZ, WILLIAM P. SMALE, New York City; WILLIAM S. MARTENS, Shrubb Oak.

To Chanute Field, Rantoul, Ill., Aviation Section, Signal Corps, from Chanute Field, Lieut. LINN V. H. REEDS, New York City.

To Ellington Field, Houston, Texas,, Aviation Section, Signal Corps, from Ellington, Lieut. ALBERT VALENSI, New York City.

To Fort McHenry, Md., for duty, from Chandler Field, Lieut. RUSSELL C. PARSON, Brooklyn.

To Fort McPherson, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM M. ENNIS, Brooklyn.

To Fort Oglethorpe, for instruction, Capt. KENNEDY P. RUBERT, Oswego; Lieuts. HARRY LIPTON, SAMUEL G. SISSKIND, Brooklyn; EDWARD M. SMITH, Central Bridge; BERT G. VOORHEES, Elmira; WILLIAM E. DIEFENBACH, Hunda; WILLIAM LENETSKA, Long Island; JACOB N. FEINBERG, ROBERT FLANDERS, HERMAN MARTINSON, IRVING H. RUSSETTE, New York City; HARRY WRONKER, Rochester; GUNNI JULIUS BUSCK, Westfield; WILLIAM J. MEYER, White Plains; from Camp Jackson, Lieut. EDWARD N. PACKARD, Saranac Lake; from Washington, D. C., Lieut. CHARLES R. HENRY, New York City.

To Fort Riley, for duty, Lieut. CARL G. FROST, Buffalo; FRANK A. SHARPE, New York City; from Fort Riley, Lieut. MATHER CLEVELAND, New York City.

To Fort Sill, Okla., Aviation Section, Signal Corps, from Austin, Capt. EDWIN S. INGERSOLL, Rochester.

To Fort Slocum, New Rochelle, N. Y., in connection with the establishment of exhibit materials in connection with the campaign to combat venereal diseases, and upon completion *to his proper station,* Capt. ALEC N. THOMSON, Brooklyn.

To Hazelhurst Field, Mineola, L. I., N. Y., Aviation Section, Signal Corps, from Hazelhurst Field, Lieut. THEODORE S. WEST, Albany.

To Hoboken, N. J., for duty, Capts. EDWARD E. GREEN, Brooklyn; ROY B. DUDLEY, Clinton; CHARLES B. FITZPATRICK, New York City; ELBERT A. PALMER, Saratoga Springs; JOHN J. ENGLISH, Troy; Lieuts. L. JOHNSON, Binghamton; ALBERT E. GILMARTIN, EUGENE H. GOODFELLOW, PERCY HOUGHTON, Brooklyn; CLARK V. FAIRBANKS, Dansville; THOMAS F. DAVIES, Floral Park; MILTON J. JOHNSON, Jamestown; SILAS L. FILKINS, New York City; ARTHUR T. DAVIS, Pine Bush; FRANK A. AUGUR, South Bethlehem.

To Langley Field, Hampton, Va., Aviation Section, Signal Corps, from Langley Field, Lieut. HUGH S. CHIDESTER, Hoboken.

To Love Field, Dallas, Texas, Aviation Section, Signal Corps, from Love Field, Lieut. MAX MENSCH, Brooklyn.

To Newport News, Va., for temporary duty, from Fort Oglethorpe, Lieut. MORRIS R. BRADNER, Warwick.

To New York City, Neurological Institute, for intensive training, Lieut. EUGENE H. BEUDREAU, Auburn; for intensive training in his specialty, from New York, Lieut. ROYALL G. CANNADAY, New York City; on completion to report in person *to the commanding officer,* Twelfth Regiment Armory, New York, for duty, Lieut. WALTER M. KRAUS, New York City. Post-Graduate School and Hospital, for instruction in urology and dermatology, Lieut. THOMAS P. BURRUS, Brooklyn.

To Princeton, N. J., School of Military Aeronautics, and Camp Merritt, N. J., in respect to the examination of the command for nervous and mental diseases, and on completion to his proper station, Capt. SANGER BROWN, White Plains.

To Rockefeller Institute, N. Y., for instruction, Lieut. HAROLD L. MEIERHOF, New York City; from Army Medical School, Lieut. HERBERT F. JACKSON, New York City.

To Takoma Park, D. C., Walter Reed General Hospital, for temporary duty, from Fort McHenry, Capt. EDWARD DOWDLE, Oswego.

To Wilbur Wright Field, Fairfield, Ohio, Aviation Section, S. C., from Wilbur Wright Field, Lieut. SAMUEL TRIPLER, New York City.

To Williamsbridge, N. Y., for temporary duty, Capt. JAMES C. DAVIS, Rochester.

Honorably discharged, Capt. MAXMILIAN L. LOEB, New York City.

To his home and honorably discharged on account of being physicaliy disqualified for active service, Capt. LEMON D. WASHBURN, Hempstead; Lieuts. ISIDOR KRAUSS, EDWARD H. McCAFFREY, Brooklyn; on account of being physically disqualified for active service, incurred previous to his entrance into the service, Lieuts. PERCIVAL D. BAILEY, Endicott; HEMAN R. MARVIN, Lyon Mountain; LEONARD A. JESLOW, New York City.

Honorably discharged, Lieut. RUEL B. MARBLE, New York City.

North Carolina

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieuts. ROBERT K. BECKWITH, Rosemary; ROBERT J. LOVILL, Wingate.

To Fort Monroe, Va., for the special examination of the command for tuberculosis, from Newport News, Capt. THOMPSON FRAZER, Asheville.

To Fort Oglethorpe, for instruction, from Camp Bowie, Lieut. DARIUS C. ABSHER, Mt. Airy.

To Rockefeller Institute, New York, for instruction, from Fort Oglethorpe, Lieut. JAMES C. BRASWELL, Jr., Wilson.

Ohio

To Austin, Texas, State University, for duty, from Fort Myer, Capt. WILLIAM J. MANNING, Cleveland.

To Camp Sevier, Greenville, S. C., Aviation Mobilization Camp, for duty, Lieut. THOMAS A. GRAVEN, Wooster.

To Camp Sherman, Chillicothe, Ohio, for duty, from Army Medical School, Lieut. JOHN D. NOURSE, Kenton.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. SIDNEY C. VENABLE, Cleveland.

To Fort Oglethorpe, for instruction, Lieut. CHARLES K. ERWIN, Cincinnati; from Camp Custer, Lieuts. IVAN J. RANSBOTTOM, Coldwater; CHARLES R. DEEDS, Dalton.

To Fort Riley, for instruction, Lieut. VEST D. REICHELDERFER, Akron. For temporary duty, Lieut. CHARLES A. HENRY, JR., Fostoria.

To Lakewood, N. J., for duty, from Pittsburgh, Capt. PAUL J. COLLANDER, Ashtabula.

To Rockefeller Institute, New York, for instruction, from Fort Oglethorpe, Lieut. JAMES H. WARREN, Columbus.

To St. Louis, Mo., Washington University Medical School, for instruction, from Camp Taylor, Capt. IVAN I. YODER, Cleveland.

Honorably discharged, Lieut. ROBERT M. FULWIDER, Zanesville.

Oklahoma

To Camp Gordon, Atlanta, Ga., for temporary duty, from St. Louis, Lieut. HARRY J. SIMS, Stigler.

To Camp Grant, Rockford, Ill., for duty, from Army Medical School, Lieut. WILLIAM O. FISCHER, Muskogee.

To Fort Riley, for instruction, Lieuts. ALONZO P. GEARHART, Blackwell; HUBERT W. CALLAHAN, LOREN C. PRESSON, Collinsville; HOWSEN C. BAILEY, Sulphur.

To Fort Sill, Okla., Aviation Section, Signal Corps, Post Field, for duty, Lieuts. ISAAC L. DOWDSY, New Wilson; JAMES A. CHEEK, Sallisaw; JOHN F. DUCKWORTH, Tahlequah; DAVID A. BEARD, Westville.

To Oklahoma City, Okla., for instruction in orthopedic surgery, from Camp Doniphan, Lieut. NOVEL W. CAMPBELL, Poteau; from Camp Hospital, Douglas, Lieut. RALPH V. SMITH, Tulsa.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. SIMS D. BEVILL, Poteau.

Oregon

To Camp Dix, Wrightstown, N. J., for duty, from Army Medical School, Lieut. ROBERT A. SHERWOOD, Portland.

Pennsylvania

To Army Medical School, Washington, D. C., for duty, from Army Medical School, Lieut. ZERA E. BOLIN, Philadelphia. For instruction, from Camp Jackson, Lieut. LEE T. MULLAHEY, Shenandoah.

To Baltimore, Md., for duty, Lieut. HOWARD S. BUSLER, Lansdowne.

To Camp Beauregard, Alexandria, La., base hospital, Major JOSEPH McFARLAND, Germantown, Philadelphia.

To Camp Dix, Wrightstown, N. J., for duty, from Army Medical School, Lieut. ROBERT SHOEMAKER, III, Ogontz; from Camp Dix, Lieut. ROBERT E. DAVISON, Pittsburgh; from Camp Meade, LOUIS H. MAYER, JR., Johnstown.

To Camp Dodge, Des Moines, Iowa, for temporary duty, from St. Louis, Lieut. ROBERT E. STRASSER, Reading.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Pike, Lieut. HARRY O. MATEER, Pittsburgh.

To Camp Grant, Rockford, Ill., base hospital, from Fort McPherson, Major WALTER A. DEARTH, Pittsburgh.

To Camp Jackson, Columbia, S. C., for temporary duty, from Camp Lee, Lieut. CARL G. YOUNT, Philadelphia.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieuts. CEDRIC E. FILKINS, SAMUEL R. SKILLERN, Philadelphia.

To Camp Stuart, Newport News, Va., to examine the command for nervous and mental diseases, Lieut. RALPH L. HILL, Woodville.

To Fort McHenry, Md., for temporary duty, from Fort Oglethorpe, Lieut. HARRY F. GARMAN, Barnesboro.

To Fort Monroe, Va., for the special examination of the command for tuberculosis, from Newport News, Va., Lieut. WILLIAM H. HERR, Lancaster.

To Fort Oglethorpe, for instruction, Capts. CHARLES L. OLDS, Bryn Athyn; HERBERT OLD, Philadelphia; Lieuts. OLIVER B. SIMON, Retreat; HOMER G. COLLINS, Meyersdale; BENJAMIN F. HAINES, New Castle; from Camp Jackson, Lieut. URBAN H. REIDT, Jeanette.

To Fort Riley, for duty, from Camp Meade, Lieut. HAROLD E. HERSH, Palmerton.

To Fort Story, Va., for duty, from Fort Monroe, Lieut. CHARLES C. CROUSHORE, Greensburg.

To Hoboken, N. J., for duty, from Pittsburgh, Lieut. JESSE R. COOPER, New Castle.

To Lakewood, N. J., for duty, from Pittsburgh, Lieut. MILTON H. BACHMAN, McKeesport.

To Mineola, L. I., N. Y., Hazelhurst Field, for duty, Lieuts. JEREMIAH A. KLOTZ, Allentown; ROBERT P. REGESTER, Philadelphia.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Devens,* base hospital, Lieut. JOHN H. SEIPEL, Pittsburgh. *Cornell Medical College,* for instruction in military roentgenology, from Camp Custer, Lieut. THOMAS L. McCULLOUGH, Homewood. *Neurological Institute,* for instruction in his specialty, Lieut. MATTHEW C. BAINES, Frankford, Philadelphia.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Lieuts. EDWARD A. STEINHILBER, Philadelphia; GEORGE R. LACY, Pittsburgh.

To St. Louis, Mo., Washington University, for instruction, from Camp Gordon, Lieut. SAMUEL STALBERG, Philadelphia.

To Washington, D. C., for instruction, from Camp Meade, Capt. WARREN WALKER, Philadelphia. For temporary duty, from Rockefeller Institute, Lieut. CLIFFORD C. HARTMAN, Pittsburgh.

Honorably discharged, Capt. GEORGE T. WOODLAND, Philadelphia; Lieut. HENRY L. LEWIS, Erie; Lieut. CHARLES C. CROUSHORE, Greensburg; on account of being physically disqualified for active service, Lieuts. ANDREW J. COLBORN, Connellsville; WILLIAM F. DAVISON, Dorranceton; WILLARD B. CAMPBELL, Harrisville; ALEXANDER C. BUTCHER, SCOTT O. LARRABEE, Philadelphia; NORWIN L. KERR, Scottdale; PHILIP J. DAVIES, Scranton.

Porto Rico

To Army Medical School, Washington, D. C., for instruction, Lieuts. AUGUSTINE R. LANGIER, San Juan; JUAN H. FONT, Toa Alta.

To Porto Rico, Porto Rican Troops, for duty, Major WILLIAM F. LIPPITT, San Juan.

Rhode Island

To Camp Devens, Ayer, Mass., for duty, from Army Medical School, Lieut. CLYDE B. COVEY, Howard.

To Fort Oglethorpe, for instruction, Lieuts. KENNETH CHURCHILL, WILLIAM W. CUMMINGS, Providence.

South Carolina

To Fort Oglethorpe, for instruction, Lieuts. HALBERT H. ACKER, Anderson; OSCAR L. BRUERTON, Georgetown; JOHN B. SETZLER, Newberry.

To St. Louis, University of Washington, for instruction, Lieut. ELIJA M. HICKS, Coward.

South Dakota

To Camp Dodge, Des Moines, Iowa, for duty, Lieut. LORENS A. HAUG, Canton.

Tennessee

To Camp Kearny, Linda Vista, Calif., for duty, from Presidio, Lieut. JAMES A. SMITH, Chattanooga.

To Camp MacArthur, Waco, Texas, for the special examination of the command for tuberculosis, from Camp Pike, Lieut. JAMES M. OLIVER, Portland.

To Camp McClellan, Anniston, Ala., for temporary duty, from St. Louis, Capt. JAMES BREW, JR., Nashville.

To Fort Oglethorpe, for instruction, Lieuts. GLENN BARTLETT, Kingsville; CONSTANTINE P. WALLER, Nashville; CECIL E. WARDE, Memphis; WILLIS S. ALEXANDER, Ridgley; from Camp Jackson, Lieuts. LEOPOLD SHUMACKER, Chattanooga; OWEN S. DEATHRIDGE, Nashville.

To St. Louis, Mo., Washington University Medical School, for instruction, from Camp McClellan, Capt. BERNARD C. McMAHON, Memphis.

To his home and to the inactive list, Lieut. GID M. HALL, Lenoir City.

Texas

To Army Medical School, Washington, D. C., for instruction, from Army Medical School, Lieut. LEVY S. JOHNSON, Richmond.

To Camp Bowie, Fort Worth, Texas, for duty as junior member of physical examining unit, medical member of examining board and recruiting officer, Lieut JAMES W. REID, Maysfield.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. LUCIUS L. HANDLY, Houston.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. JOHN J. TRIBLE, Dallas.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Army Medical School, Lieut. WILLIAM E. NESBIT, San Antonio.

To Dallas, Texas, Aviation Repair Depot, for duty, from Austin, Capt. ROBERT A. TRUMBULL, Dallas.

To Fort Oglethorpe, for instruction, Lieut. HENRY H. PANTON, Gainesville; from Morrison, Va., Lieut. HENRY F. WILKINS, Fort Worth; from St. Louis, Lieut. DEWITT SMITH, Dallas.

To Fort Riley, for instruction, from St. Louis, Capt. CHARLES M. AVES, Houston; Lieut. JOHN C. THOMAS, Taylor; for instruction, Lieut. HARRY L. LOCKER, Winchell.

To Fort Worth, Texas, Taliaferro Field, Hicks Station, for duty, Capt. CARMETTE A. COBB, Beaumont; HERBERT CALDWELL, Corpus Christi; Lieuts. LEM FAULK, Alba; WILLIAM E. CRAVENS, Southland. Benbrook Station, for duty, Lieuts. THOMAS M. DARWIN, Cooper; HERBERT N. BARNETT, Dublin; ROY L. AKEHURST, Heckley. Everman Station, for duty, Lieuts. JAMES D. CURRIE, Hico; REESE F. CURRIE, Mancha.

To Oklahoma City, Okla., for instruction in orthopedic surgery, Lieut. CHARLES E. SCULL, San Antonio; CALLAS SOUTHARD, Stamford; CLAUDE E. PIERSALL, Wolfe City; from Camp Hospital, Columbus, N. M., Lieut. ROBERT A. GORDON, Lorena.

To Rockefeller Institute, N. Y., for instruction, from Fort Oglethorpe, Capt. ROYAL K. STACEY, Lewisville; Lieut. CRANZ NICHOLS, Maxwell.

To San Antonio, Texas, Kelly Field, Aviation Section, Signal Corps, for duty, Lieuts. RUFUS G. WILSON, Dallas; ISADORE L. PAWELEK, Falls City.

To his home and honorably discharged on account of inaptitude for the service, Lieut. THOMAS N. ROACH, Medicine Mount.

Utah

To Camp Grant, Rockford, Ill., for temporary duty, from St. Louis, Lieut. CLARENCE A. NYVALL, Salt Lake City.

To Oklahoma City, Okla., for instruction in orthopedic surgery, Lieut. EZEKIEL R. DUMKE, Ogden.

Vermont

To Fort Oglethorpe, for instruction, Lieuts. ANELANE E. HOULE, Bennington; WALDO R. HARKNESS, Montpelier; HENRY E. SOMERS, West Derby.

To Fort Porter, N. Y., for duty, from Washington, D. C., Lieut. STEWART L. GOODRICH, Warebury.

Virginia

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. HARVEY R. LINESAY, Waynesboro.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. BERNARD L. JARMAN, Charlottesville.

To Camp MacArthur, Waco, Texas, for the special examination of the command for tuberculosis, from Camp Pike, Lieut. HORACE T. HAWKINS, Richmond.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. ROY C. SMISSON, Fort Valley.

To Fort H. G. Wright, N. Y., with Coast Defenses of Long Island Sound, from Fort Story, Lieut. NATHANIEL F. RODMAN, Norfolk.

To Fort McHenry, Md., for temporary duty, from Takoma Park, Major WILSON E. DRIVER, Norfolk.

To Fort Oglethorpe, for instruction, Capts. EDWARD H. MILLER, JR., Danville; RALPH W. BROWN, Roanoke; Lieuts. BASIL E. STRODE, Amherst; ALLEN C. BILLER, Forestville; WHITFIELD P. DAVIS, Galax; JOSEPH S. ROME, Norfolk; EUGENE P. COX, Rye Cove; from Fort H. G. Wright, Lieut. MINOR C. LIE, University.

To Richmond, Va., for duty, Lieut. WILLIAM E. HOPKINS, Richmond.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. JAMES M. TAULBES, Cleveland.

Washington

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. JOSEPH R. TURNER, JR., Tacoma.

To Camp Lewis, American Lake, Wash., for duty, Lieut. THOMAS G. CLARKE, Everett.

To Fort Monroe, Va., for the special examination of the command for tuberculosis, from Newport News, Capt. WILLIAM H. ANDERSON, Seattle.

To Fort Riley, for instruction, Lieut. EARLE V. SHEAFE, Winlock.

To Western Department, for assignment to duty, Lieut. ALBERT P. DURYEA, Everett.

West Virgina

To Camp Taylor, Louisville, Ky., for duty, from Army Medical School, Lieut. LAWRENCE A. PETTY, Charleston.

To Fort Oglethorpe, for instruction, Capts. GEORGE FORDHAM, Affinity; FRED W. BERGER, Hiawatha; WALTER F. LEECH, Richwood; Lieuts. THOMAS G. TICLE, Bluefield; WILLIAM P. SAMMONS, Cameron; WILLIAM E. WHITESIDE, Harrisville; CHARLES T. WHITESIDE, Leon; MARVIN H. PORTERFIELD, Martinsburg; ARCHIE B. RINEHART, McMechen; NOAH E. STEELE, Omar; RAY KESSEL, Ripley; WILLIAM B. HITE, Stark West.

To his home and his resignation accepted, Lieut. LOUIS A. HILTON, Wilcoe.

Wisconsin

To Central Department, for assignment to duty, Lieut. FRANK H. McLAUGHLIN, Milwaukee.

To Douglas, Ariz., for duty, from Fort Leavenworth, Lieut. FRANKLIN M. HAWLEY, Bayfield.

To Fort Oglethorpe, for instruction, from Camp Custer, Capt. IRVING A. MYERS, Cottage Grove.

To Fort Riley, for instruction, Capt. HENRY C. CALDWELL, St. Croix Falls; Lieuts. CHARLES M. GRISWOLD, Alma Center; JAMES W. DOUGHTY, Elrey; G. FRANK ANDREW, LaCrosse; CLARK B. DEVINE, Marshall; JAMES D. NELSON, Milwaukee; ASCHEL W. JAMES, Musceda; THOMAS J. McCRORY, Racine; HOWARD J. BARRY, Sun Prairie.

To Sheboygan, Wis., to examine applicants for appointment in the Officers Reserve Corps, Major EDWARD J. BARRETT, Sheboygan.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. MAXIMILIAN W. MOELLER, Milwaukee.

Wyoming

To Fort Riley, for instruction, Capt. WALTER M. LACEY, Cheyenne; Lieut. DURWARD B. PARK, Laramie.

CORRECTION

Under "Orders to Officers of the Medical Corps": issue of Jan. 19, 1918: *To Camp Jackson*, Columbia, S. C., base hospital, from Camp Jackson, Lieut. GEORGE B. BOOTH, Toledo, Ohio, instead of GEORGE E. BOOTH of Lake Village, Ark.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Shop Men Vaccinated.—The vaccinating of the 1,250 employees of the Missouri Pacific shops, in Little Rock, with typhoid and smallpox virus has been completed by Dr. Jacob C. Geiger, U. S. P. H. S.

New Hospital.—The Stuttgart City Hospital was opened to receive patients, January 14. The institution is in charge of Mrs. Rex B. Wilcox; formerly of the Baroness Erlanger Hospital, Chattanooga, Tenn.

Personal.—Dr. Charles M. Lutterloh, Jonesboro, has been appointed a member of the state board of health, to succeed Dr. Burrell A. Fletcher, McClelland.——Dr. James H. Lenow, Little Rock, has been appointed surgeon of the Pulaski County Guards, with the rank of major.

COLORADO

New Officers.—At the annual meeting of the El Paso County Medical Society, held at Colorado Springs, Dec. 30, 1917, Dr. George B. Gilmore was elected president; Dr. James H. Madden, vice president; Dr. James R. Stewart, secretary (reelected), and Dr. Clarence R. Arnold, treasurer.

Penitentiary Sentence.—Dr. Albert N. White, Denver, proprietor of the White Cross Sanitarium, charged with the violation of the Harrison Narcotic Law, is said to have been found guilty, January 9, and sentenced to serve two years in the Federal Penitentiary, Leavenworth, Kan., and to pay a fine of $500. The report is that Dr. White pleaded guilty, throwing himself on the mercy of the court, rather than face twelve counts on an indictment returned by the federal grand jury, which sat at Pueblo last fall.

Personal.—Dr. Robert Levy has succeeded Dr. Francis H. McNaught as president of the staff of St. Joseph's Hospital, Denver.——Dr. Harry S. Finney has resigned from the Denver Health Department.——Dr. T. Mitchell Burns has been elected president and Dr. Elmer A. Scherrer, vice president, of the staff of the Mercy Hospital, Denver.——Dr. Claude C. Keeler, Denver, has sailed for England, where he will enter a military hospital in London.——Dr. Cyrus L. Pershing, Denver, has been accepted for hospital service in France.

ILLINOIS

Smallpox at Macomb.—It is reported that there are about fifty cases of smallpox in Macomb, and a representative of the state board of health has been sent to the city to take charge of the situation.

Internists Meet.—The third annual meeting of the Chicago Society of Internal Medicine was held, January 28, under the presidency of Dr. Robert B. Preble. Dr. George B. Eusterman, Rochester, Minn., presented a contribution on "Gastric Syphilis" with a report of forty proved cases.

Conference on Tuberculosis.—A clinical conference on tuberculosis was held in Springfield, January 23, 24 and 25, at which the war tuberculosis problem was thoroughly discussed. Dr. Frank Billings, Ethan A. Gray, Orville W. McMichael, and others attended the conference and acted as instructors at the clinic.

Chicago

Cook County Hospital Service Offered to Surgeon-General's Office.—The president of the board of Cook County Commissioners has addressed the Surgeon-General of the Army stating that the Cook County Hospital is the clearing-house for the industrial surgeons of approximately 3,000,000 people, that it has 2,400 beds and a competent staff selected by civil service examination, and that on behalf of the board of commissioners he tenders the use of the hospital and its resources for instructing officers of the United States Army. At the same time the attending staff of the hospital addressed the Surgeon-General, approving the action of the county commissioners, and offering its services in the same capacity.

IOWA

Biologic Station Burns.—The United States government sustained a loss of $60,000 by fire, when the main laboratory

of the United States Biologic Station, Fairport, was burned to the ground.

Quarantine Lifted.—The quarantine which has confined members of the Remount Troup and Company B of the Three Hundred and Thirty-Sixth Infantry to their barracks at Fort Des Moines, on account of the presence of meningitis, was lifted, December 24.

Faculty Changes.—Dr. Theodore A. Willis has succeeded Dr. Edwin E. Hobby on the faculty of the state university. Dr. John E. Hamilton, Albany, has been appointed to fill the place of Mark F. Boyd, state epidemiologist, and Dr. Ralph E. Russell has succeeded Dr. A. T. Bailey in the department of oral surgery.

Internment for Social Disease Victims Proposed.—Under the state board of health law, now being framed by Dr. Guilford H. Sumner, individuals afflicted with venereal disease will be placed in hospitals and treated until cured. It will be the duty of physicians to report all such cases as they are compelled to report other communicable diseases.

New Officers.—Woodbury County Medical Society, at Sioux City, January 17: president, Dr. Ralph M. Waters; vice president, Dr. Leroy R. Tripp; secretary-treasurer, Dr. W. D. Bangor.——Scott County Medical Society, at Davenport, January 8: president, Dr. Frank Neufeld; vice president, Dr. Roscoe P. Carney; secretary, Dr. Robert E. Jameson, and treasurer, Dr. Sidney G. Hands.

Need for Inebriate Hospital Lessened.—The State Hospital for Inebriates at Knoxville now has only seventy-one patients, on account of Iowa's having taken its position among the dry states of the Union. There has been a steady diminution during the last two years in the cost of maintenance of the institution, from $12,243 for the quarter ending Dec. 31, 1916, to $3,445 for the quarter ending Dec. 31, 1917.

Personal.—Dr. Frank O. Burk, Davenport, has resigned as physician of Scott County, and has been succeeded by Dr. Edward S. Bowman, Davenport.——Dr. George E. Decker has been reelected president and director of the Register Life Insurance Company, Davenport.——Dr. Raymond E. Peck, Davenport, has been elected a member of the board of directors of the Scott County Savings Bank.——Dr. Herman P. Benjamin, Council Bluffs, has returned invalided after one year of service in a military hospital near London.——Dr. Edward Embree, Winterset, is reported to be seriously ill with disease of the kidneys.——The residence of Dr. Thomas E. Powers, Clarinda, suffered serious damage by fire, December 21.——The residence of Dr. Abraham J. Hobson, Hampton, was destroyed by fire, December 12, with a loss of $15,000, partially secured by insurance.

MINNESOTA

Sanatorium Items.—The tuberculosis sanatorium, erected south of Thief River Falls by Pennington, Marshall and Roseau counties, was formally opened to public inspection, January 4.——The opening of the Wadena-Todd County Sanitarium has been indefinitely delayed on account of the delay in the receipt of a portion of the equipment.

Hospital News.—Mrs. Summers has purchased the property at Fourth and Emory Streets, Tracy, and is having the building remodeled so that it may be used as a hospital.——The new St. Joseph's Hospital, Rice Lake, is to cost $75,000 and the building will be five stories and basement in height, and equipped in modern style.——The St. John's Hospital Association, Red Wing, is about to build a thirty-room fireproof addition, which is to cost about $50,000.

Health Board Election.—At the annual meeting of the state board of health at St. Paul, January 8, Dr. Egil Boeckmann, St. Paul, was elected president, succeeding Dr. William A. Jones, Minneapolis, term expired; Dr. Harry G. Irvine, Minneapolis, was appointed director of the newly created division for the control of venereal diseases; Dr. Christopher Graham, Rochester, was reelected vice president of the board.

Elections.—At the semiannual meeting of the Red River Valley Medical Association held in Crookston, Dr. Herman W. Froehlich, Thief River Falls, was elected president; Dr. Franklin M. Dryden, vice president, Dr. Ralph L. Kirsch, Crookston, secretary.——The annual meeting of the Park Region District Medical Society was held at Fergus Falls, January 9, and the following officers were elected: president, Dr. Arthur G. Kessler, Battle Lake; vice presidents, Drs. Peter Boysen, Pelican Rapids, and Otto M. Haugan, Fergus Falls; secretary-treasurer, Dr. Carl O. Estrem, Fergus Falls.

Personal.—Dr. De Wayne Townsend has been appointed local surgeon for the Minneapolis, St. Paul and Sault Ste. Marie Railway at Belgrade.——Dr. Charles W. More, Eveleth, has been appointed a member of the advisory commission of the State Sanatorium for Consumptives, succeeding Dr. H. Longstreet Taylor. At the annual meeting of the commission, January 12, Dr. Edward T. Sanderson, Minnesota, was elected vice president; Dr. Patrick A. Smith, Faribault, secretary, and Dr. Robinson Bosworth, St. Paul, was elected executive secretary.——Dr. Ignatius J. Murphy, St. Paul, executive secretary of the Minnesota Public Health Association, has resigned to enter the military service.——Dr. C. R. Crandall has been appointed a member of the Park Board of Thief River Falls.

NEW YORK

Fronczak Reappointed.—Dr. Francis E. Fronczak has been retained as health commissioner of Buffalo by Mayor Buch, under whose jurisdiction the health department is placed as a part of the department of public safety. Dr. Fronczak had served as health commissioner for eight years.

Overcrowding in State Hospitals.—The annual report of the State Charities Aid Association to the State Hospital Commission shows that the total capacity of the thirteen state hospitals for the insane is rated at 27,890, and that at the end of the fiscal year they contained 34,798 inmates, or an excess of 25 per cent. The report directs special attention to the overcrowding in the metropolitan district, which leaves the Manhattan, Central Islip, Brooklyn and Kings Park state hospitals with one half of the total overcrowding in the state.

Control of Venereal Diseases and Marriage.—At the last session of the legislature an amendment to the marriage relation law was passed which, it is hoped, will become an important factor in educating the people of the state as to the importance of clean marriages. This amendment was urged by Health Commissioner Herman M. Biggs, and to aid in its enforcement the commissioner has addressed a circular letter to town and county clerks who issue marriage licenses requesting their cooperation and asking them to post a card accompanying the letter containing in poster form the following information: "Men and women! Do you know you cannot marry unless you receive a license? No license will be issued until you both swear to the following statement: 'I have not to my knowledge been infected with any venereal disease, or if I have been so infected within five years I have had a laboratory test within that period which shows that I am now free from infection from any such disease.'"

New York City

For Rockefeller Hospital.—The Billings estate on Washington Heights, comprising 57 acres, which was purchased by John D. Rockefeller, Jr., last year, is to be converted into a war hospital. Plans have been filed providing for the expenditure of about $500,000 in remodeling the house and erecting other buildings necessary to the completion of a hospital system.

Associated Out-Patient Clinics of New York City.—The annual meeting of this organization was held on January 25 at the Presbyterian Hospital. Dr. Charles Hendee Smith read a paper on "Voluntary Workers in Dispensaries," in which he suggested the use of nonmedical volunteers in clinics to attend to the clerical work. At Bellevue Hospital an average of twenty volunteer workers is constantly employed, with a great saving of the doctors' time. The public is at this time more than ready to respond to a call for help of this kind.

Children's Division of Bellevue.—The Children's Medical Division of Bellevue Hospital has been reorganized during the last eighteen months. It is ready to offer to graduates in medicine an opportunity to do work in the wards and outpatient department. It is believed that any physician who is able to spend two months or more working in this service will find it profitable. No formal teaching is offered, but the opportunity is given to make rounds and study patients in the wards with members of the house and attending staffs, and to work in the outpatient department under the direction of the attending staff.

Scientific Body Presents Medals.—On the occasion of the annual banquet of the National Institute of Social Sessions, gold medals were awarded to Dr. William J. Mayo, Herbert Hoover, food administrator, and Henry P. Davison, chairman of the war council of the American Red Cross, in recognition

of their humanitarian work. Presentation medals for services in their special fields were awarded to Dr. Thomas W. Salmon, Prof. Charles A. E. Winslow, Prof. Irving Fisher, and John A. Kingsbury, ex-commissioner of charities of New York.

Personal.—Major Grayson M. P. Murphy, who has had charge of the field work of the Red Cross in Europe, has returned to New York to report on his work. Major Murphy will return to France shortly.——Dr. Edward L. Kellogg of Gouverneur Hospital, who was sued for $50,000 damages by William Berlman for the loss of two toes, alleged to be due to the manner in which Dr. Kellogg conducted an operation, was recently acquitted and vindicated by the supreme court.——Dr. Frank J. Monahan was appointed secretary to the Brooklyn Board of Health, January 16, succeeded Dr. Alfred E. Shipley, resigned.

Prevention of Infant Mortality.—Representatives of the American and British associations for the study and prevention of infant mortality met, January 25, under the presidency of Mrs. William Lowell Putnam. Among the speakers were Miss Julia C. Lathrop, chief of the Children's Bureau at Washington; Dr. S. Josephine Baker, director of the Bureau of Child Hygiene of the New York City Department of Health, and Dr. J. Morris Slemons, professor of obstetrics at Yale, who spoke on the subject of prenatal care. The Countess of Aberdeen outlined the work that was being done in the British Isles in the way of child welfare.

Red Cross School for Cripples.—The American Red Cross has received a gift of $50,000 from Jeremiah Milbank to be used in establishing in this city a school for disabled and crippled men and for the reeducation of maimed soldiers and sailors. The school will be located at 311 Madison Avenue, New York. All the plans have been perfected, and the members of the staff have spent the past six months in the study of methods employed in Europe in the rehabilitation of disabled soldiers. The enterprise is under the supervision of a committee consisting of Douglas C. McMurtrie, director; Lieut.-Col. C. H. Connor, Washington, Capt. Sidney R. Burnap, M. R. C., and Dr. Richard M. Pearce, Philadelphia.

NORTH DAKOTA

Personal.—Dr. D. Edward Ryan has been appointed local surgeon for the Chicago, Milwaukee and St. Paul, the Minneapolis, St. Paul and Sault Ste. Marie railways at Hankinson.

New Officers.—At the annual meeting of the Northwestern Medical Association, held in Minot, January 16, the following officers were elected: president, Dr. Edward M. Ransom, Minot; vice president, Dr. Frederick K. Kolb, Granville, and secretary-treasurer, Dr. Peter A. Nestos, Minot.——At the annual meeting of the Grand Forks District Medical Society, held in Grand Forks, January 7, Dr. Thomas Mulligan was reelected president and Dr. William H. Witherstine was reelected vice president; Dr. Henry J. Friesen was elected secretary, and Dr. Henry W. F. Law, treasurer.

PENNSYLVANIA

Hospital to Care for Contagious Diseases.—The Charity Hospital Association, Norristown, to save the state aid to the hospital, will care for contagious diseases and will erect a new building for this purpose. Norristown has no contagious disease hospital, which makes it necessary for such cases to be handled at homes, necessitating long quarantines, and the board of health of that city has been urging this step for years.

Personal.—Dr. Rollen L. Shinaberry, Scranton, has so far recovered that he has left the State Hospital.——Dr. John T. Harbold, Dallastown, sustained serious internal injuries, January 17, when his automobile ran into a telephone pole.——Major Jonathan M. Wainwright, Scranton, chief of staff of the base hospital, Camp Greene, Charlotte, N. C., is ill with pneumonia.——Dr. John Szlupas, formerly practitioner of Scranton, was president of the convention of Lithuanian delegates at Stockholm, January 4, which resulted in a formal declaration of freedom on the part of the Lithuanians.——Dr. John G. Wilson has been appointed resident physician at the Hillside Sanitarium for Mental Defectives and Indigents, near Scranton.——Dr. Charles F. Palmer has been appointed chief surgeon of the Chambersburg Hospital.

Philadelphia

Northern Medical Drill Corps.—At the suggestion of the Logan Medical Association and in cooperation with the Pennsylvania Committee of the Council of National Defense, there has been organized a drill corps for physicians. Its purpose is to familiarize physicians, who may obtain commissions, with military tactics necessary for medical officers, and to better fit physicians for the added work at home by keeping them physically fit. The purposes are accomplished by regular drills under competent drillmasters. Any physician in the city of Philadelphia is eligible for membership.

Officers Elected.—At the recent meeting of the County Medical Society, the following officers were elected for the ensuing year: president, Dr. Frank C. Hammond; vice presidents, Drs. John W. West, Maxmillian D. Bromfield, Edwin C. Cooke, J. Edward Wallis, John Welsh Croskey, Albert Buckley, Robert N. Downs and Charles Mazer; secretary, William S. Wray; assistant secretary, Elmer H. Funk, and treasurer, Edward A. Shumway.——At the meeting of the Medical Club of Philadelphia, held January 18, the following officers were elected: president, Dr. Albert P. Brubaker; vice presidents, Drs. G. Oram Ring and Alexander MacAlister; secretary, William S. Wray, and treasurer, Lewis H. Adler, Jr.

Personal.—Dr. Louis Weinstock, Germantown, has been appointed assistant physician to the Lucian Moss Home, and associate assistant to the Clinic for Diseases of the Lungs, in the Mathilde Loub Dispensary, both of which institutions are connected with the Jewish Hospital of Philadelphia.——Dr. David R. Faringer, chief of the surgical clinic of Garrettson Hospital and assistant surgeon of the institution, who was charged with attempting to bribe Dr. John M. Edgar, a police surgeon and examining physician for local draft board No. 3, was acquitted by jury in the federal court, January 7. It was charged that Dr. Faringer had tried to influence the physician of the draft to pass unfavorably on the physical condition of William E. A. Reed, who had been called for physical examination under the draft law.

WASHINGTON

New Officers.—Pierce County Society at Tacoma, December 26: president, Dr. Saxe W. Mowers; vice president, Dr. Mary H. F. Perkins (reelected), and secretary-treasurer, Dr. Royal A. Gove (reelected).

Personal.—Dr. Walter J. Howells has succeeded Dr. Edgar L. Ingersoll as city physician of Spokane.——Dr. Hilbrand J. Hards has been appointed city health officer of Tacoma, succeeding Dr. Jonathan E. Henry, resigned to accept the position of state epidemiologist.

WISCONSIN

Personal.—The Fond du Lac County Medical Society tendered a farewell banquet to Capt. Patrick R. Minahan, January 15. Captain Minahan has left for his post of duty, Fort Riley, Kan.

New Officers.—Brown-Kewanee County Medical Society, at Green Bay, January 10: president, Dr. Austin O. Olmsted; vice president, Dr. Charles O. Latham, and secretary-treasurer, Dr. Emile G. Nadeau (reelected).

CANADA

Dominion Convalescents.—Under the command of Colonel Hanson, Montreal, five hotels in Derbyshire, England, have passed into possession of the Canadian overseas forces for use as convalescent homes for wounded Canadian officers and men. The Buxton Hydropathic, Palace Hotel, Devonshire Hotel, Grosvenor Private Hotel, and Pavilion Boarding House have been acquired by the war office for this purpose, and the Empire Hotel at Buxton is to be continued as a depot for discharged Canadian soldiers. The Peak Hydropathic Hotel is still used as a special Red Cross hospital for Canadians.

Personal.—Major Louis P. Gauthier, member of parliament for Gaspe, who is now in France in active service, has been renominated for parliament.——Major Robert A. Thomas, Toronto, who was with the Ontario Military Hospital at Orpington, England, and subsequently in France, has returned to Toronto on furlough.——Major W. Harley Smith, Toronto, who has been home for a short holiday, has returned to England.——Major Howard B. Jeffs, C. A. M. C., Toronto, who went overseas in 1915 and was awarded the military cross in September, 1916, was formally presented with that honor by the lieutenant-governor of Ontario on January 13 in Toronto. Major Jeffs attracted much attention in the fall of 1917 by his action in rescuing the Red Cross flag from the

abandoned vessel when the hospital ship on which he returned to Canada ran aground on the rocks near Halifax.—— Col. Robert D. Rudolf, Toronto, formerly professor of therapeutics in the medical department of the University of Toronto, has had conferred on him the new order of Commander of the British Empire. Colonel Rudolf has rendered valuable service as consulting physician to the Canadian forces in England and France.——Lieut.-Col. George S. Rennie, C. A. M. C., Hamilton, Ont., has been made a C. M. G. He has served for some time as A. D. M. S. of the Dover district and the Shorncliffe area.

Hospital News.—The Mount Sinai Sanatorium, Montreal, an institution for the treatment of destitute consumptives, treated 106 patients during varying periods of 1917. This sanatorium is a factor in the prevention of tuberculosis in the province of Quebec. The expenditure for the year amounted to $35,466.43.——An arrangement whereby Canadian soldiers returning from the front suffering from mental disorders will be treated in the provincial hospitals for the insane has been effected between the Military Hospitals Commission and the provincial governments of Canada. Under the arrangement the provinces which have the medical, nursing and administrative organizations will provide accommodation for the patients and the Dominion government will pay a certain sum per day for each soldier treated. Some of the provinces will have to add to their present accommodation. So far about 326 Canadian soldiers have returned to Canada insane, and it is stated that a like number similarly afflicted are still in England.—— The year 1917 has been one of the hardest years for the Western Hospital, Montreal. The city of Montreal and the province of Quebec are being urged to undertake a part of the work of that institution in order that it may carry on. There was in 1917 a deficit of $40,324.79, as compared with $17,436.48 for 1916. Dr. Richard Kerry, the secretary, in his report, stated that the cost of a bed per day had risen from $2.47 in 1916 to $3.01 in 1917. Dr. F. J. Hackett, medical superintendent, reported a total of 1,388 patients having been admitted during 1917. The outdoor patient department had had 19,649 consultations, an increase of 1,424 over 1916.

GENERAL

Correction.—The death of Lieut. Henry S. Pascal, noted in The Journal of January 26, is reported to be incorrect. The information was derived from the *Army and Navy Journal* of Dec. 1, 1917, which stated that Lieutenant Pascal had been reported dead since November 17.

Venereal Disease Legislation.—As a topic of foremost interest at present *Public Health Reports*, Jan. 18, 1918, contains a compilation of laws and regulations showing the trend of modern legislation for the control of venereal diseases. Representative laws and ordinances are given as enacted in the following states and cities: California, Indiana, Kansas, Massachusetts, Minnesota, Nebraska, South Carolina, Virginia, Vermont, Wisconsin and Washington; Louisville, Ky.; New York City, Charlotte, N. C.; Philadelphia, Spokane, Wash.; also the act of Congress of May 18, 1917, and an order of the President (1917) relating to prostitution near military camps.

Bequests and Donations.—The following bequests and donations have recently been announced:

Episcopal, St. Mary's and St. Christopher's hospitals, Philadelphia, each $1,000 by the will of James J. Grogan.

Home of the Merciful Saviour for Crippled Children, Philadelphia, $30,000 in trust, the income to be paid to persons connected with the home, and on their death, the principal to go to the institution; $500 to the House of St. Michael and All Angels for Colored Crippled Children, and $5,000 to the Home of the Merciful Saviour for the support of an inmate of the institution, by the will of Marian A. Blakiston.

State Charities Aid Association, and New York Association for the Blind, each $10,000, by the will of Hon. Joseph W. Choate.

Winnebago County, Wis., Tuberculosis Sanatorium, $24,000 by the will of Col. John Hicks, Oshkosh, Wis.

Cancer Control.—The American Society for the Control of Cancer has in its January bulletin reviewed the work of the year 1917, and through its executive committee has decided that in view of the fearful devastation of life on account of the war, it is more than ever important that it continue vigorously its work, and a war program has been outlined and approved. The program includes action by state medical societies in appointing special cancer committees, in securing laboratory diagnosis of suspected specimens, in having special meetings of county societies devoted to cancer, cancer editions of state and local medical publications, the enlistment of state and city boards of health, nurses, women's clubs, the holding of public meetings, etc.

Campaign for New Members.—The National Association for the Study and Prevention of Tuberculosis now has a membership of 2,500. It has been concluded that at this time if the association is to be of the greatest use to the nation the membership must be increased, and a campaign to secure 5,000 new members has been inaugurated. Under the plan adopted the states of the union have been apportioned and the number of new members to be secured assigned to each. Some states will be required to secure as low as ten, others as high as 450. In carrying on the appeal for new members the association is enlisting the cooperation of local and state tuberculosis organizations, and through this campaign it is expected that both national and state organizations will be benefited in their general work by the interest aroused among the people.

FOREIGN

Physicians in Danger in China.—In a telegram from Peking, dated January 15, it is stated that three physicians, including Drs. Eckfeld and Lewis, Americans, sent to Feng Chen in Chang-Shi, a province west of Peking, to investigate epidemic diseases, were threatened by a mob which became angered by the efforts of the physicians to check the spread of disease. They requested military protection.

Swedish Association Prize to Giertz.—The Jubilee prize was awarded this year to K. H. Giertz for his research on surgery of the lung and the best methods for maintaining the respiration therewith. He demonstrated the inadequacy and dangers of differential pressure procedures, while he confirmed the efficiency and harmlessness of the Meltzer-Auer insufflation technic. A point brought out in his experimental operations on the lungs was the importance of capping the stump of the bronchus with a flap from the fascia lata to ward off infection and empyema.

British Ophthalmologists to Meet.—The annual congress of the Ophthalmological Society of the United Kingdom will be held in London, May 2, 3 and 4, under the presidency of E. Treacher Collins, F. R. C. S. The session of the first day will be held at the rooms of the Royal Society of Medicine; on the second morning a visit will be made to the Metropolitan Asylums Board Ophthalmia School, Swanley. In the afternoon a visit will be made to the museum of the Royal College of Surgeons, and the evening session will be held at the Royal Society of Medicine. The session of May 4 will be clinical, and will be held at the National Hospital for Paralysis, Queen's Square.

The National Medical Institute of Mexico.—This institution was founded in 1890 for research on and exploitation of the flora, fauna, climatology and geography of Mexico, and for many years carried on this work. Especial efforts were made to classify and study the action of the native medicinal plants, and detailed reports were published from time to time for several years. A number of plants were found which have decided medicinal value, and native species which might be advantageously substituted for imported drugs. Among these were the axocopaque or native wintergreen, the yoloxochitl with an action like that of digitalis, and others with diuretic and purgative action, or valuable as dyes. One plant, the candelilla, said to be a cure for syphilis, was found useless in this respect, but has proved an important source for wax. A recent official decree has transformed the institute into the Institute of General and Medical Biology, and it thus enters on a new career.

Swedish Medical Association Elects Kraepelin Honorary Member.—At the meeting of this association in September a letter of thanks from Prof. E. Kraepelin, the psychiatrist of Munich, was read expressing his appreciation for his recent election as honorary member of the society. He said, "We Germans in the world war which we are waging for our right to exist (*Daseinsberichtigung*) have experienced so little kindness from other countries that we are particularly grateful for every friendly voice from foreign lands. I regard your action as a sign that even the most terrible war cannot completely tear away the bands which link our science." At the same sitting the gold Anders-Retzius anatomy medal for 1917 was conferred on the Berlin biologist, Prof. O. Hertwig. The foreign associate members elected during the year were H. Spitzy and G. Holzknecht of Vienna, K. Biesalski of Berlin, Albers-Schönberg of Hamburg, A. Kohler of Wiesbaden, A. J. Carlson of Chicago, O. Folin of Harvard and R. Jones of Liverpool.

LONDON LETTER

LONDON, Jan. 8, 1918.

Explosive Phenomena in Gunshot Injuries

At the Royal Society of Medicine, Mr. S. G. Shattock read an important paper in which he pointed out that these injuries are contused wounds like those produced by other foreign bodies, but with a special factor introduced—the high velocity of the penetrating body—which gives them their characteristics. Under the term "explosive effect" more than one thing is included: (1) the increase of damage due to the shattering of the bullet; (2) the additional injury resulting from the comminution of a bone and the dispersal of its fragments; and (3) the damage resulting from the high velocity of the missile. The last alone has any special pathologic interest. A German surgeon, Prof. K. Stargardt, has asserted that the British bullet is an expanding one, in consequence of the core being composed of aluminum at the point, and elsewhere of lead; that on striking (bone at least) the momentum of the lead carries this forward over the harder aluminum, and so splits the mantle. This statement has the usual amount of veracity—or rather want of veracity—which distinguishes German assertions in connection with the war.

RESULTS OF EXPERIMENTS

In order to test the point, Mr. Shattock had made the following experiment: A bullet was fired at a distance of 20 feet through a sternum, into cotton waste, from which it was recovered without having struck any second object. The sternum was selected in order to obtain a direct hit. The bullet was found to have undergone no distortion whatever. Two sternums were then spliced together and shot through in the same way; the bullet, on recovery, was found quite undamaged. In solid organs the results of high velocity are best seen in the liver when perforated by rifle bullets at close range. The typical injury is a perforation accompanied with radial fissuring of wide extent. Even here the elimination of extraneous factors, such as obliquity of impact, or turning of the missile in transit, damage due to the introduction of clothing, can be effected only by experiment. On firing through suspended sheep livers at 20 feet with a service rifle and pointed bullet, the typical injury was produced; the mechanical action of gas produced by explosion was eliminated by the distance. On analysis of the physics of this result, the wave of compressed air produced by the bullet (demonstrated by Prof. Vernon Boys in instantaneous photographs) was wholly negligible. Mr. Shattock found that if tense screens of tissue paper were shot through at 20 feet with a service rifle, the hole was but little larger than the bullet. If the air wave were of any moment, the paper would have been widely rent. Sir Victor Horsley, in commenting on the cavitation produced in his experiments of firing into clay, attributed more importance to the spin of the bullet (centrifugal action) than to its forward movement. Mr. Shattock carefully inspected all the plaster casts made from the clay in these experiments, and was unable to find the evidence of such rotation; the coarser ridges (representing shallow fissures in the clay) as well as the finer markings were longitudinal. The present British bullet makes a revolution only in 10 inches, yet explosive effects occurred in the sheep livers before referred to, in which the thickness was only 1 ½ inches, which would reduce the rotation to less than a fifth of a revolution. In only one specimen—in the war collection at the Royal College of Surgeons—are the divergent fissures curved; here the bullet traversed the body of the third lumbar vertebra first, and must have had some altogether exceptional twist imparted to it. The question is thus reduced to one of forward velocity. This is well shown in the liver by the fact that in perforations caused by shell fragments at low velocity a patulous tunnel alone results. The same difference is beautifully demonstrated in Horsley's casts, in which the distal half is only of the caliber of the bullet, the explosive or dilating effect being limited to the proximal. In the case of the clay, the ready entrance of air from behind allows of its cavitation; in the liver, where this is out of the question, the cavitation is represented by radial fissuring produced by the passage of the wave through an incompressible semisolid medium.

EFFECTS ON HOLLOW ORGANS

In hollow organs, the production of explosive effects depends on their contents, other things being equal. Such effects from rifle bullets are not observed in the stomach or intestine, by reason of the compressible air and gas which they contain, nor in the lung, for the same reason. The contusion, unattended with breach of surface, found, not rarely, in such organs, is possible from their extreme mobility and compressibility. The longitudinal wounds produced at times in the intestine by intact bullets are explained by the wall having been struck axially. In the case of the bladder, the contents of which are incompressible, explosive results are now and then encountered. In the collection there is a bladder perforated by a rifle bullet which entered through the buttock without fracturing bone, and eventually escaped above the pubes; in the posterior wall of the bladder is an entry admitting the finger; the anterior wall (exit) was rent from top to bottom. Mr. Shattock obtained similar explosive results by firing through the bladders of oxen distended with water, a service rifle being used at 20 feet. The result is a simple hydrodynamic one, and due to the wave imparted to a mobile and incompressible fluid in a confined space. If the bladder is empty, or only lightly filled, the rending on the far side does not take place. In arteries and veins, no hydrodynamic effect is observable, whether in unilateral or bilateral perforation. Its absence is possibly due to the indefinite continuity of fluid above and below the stricken spot and to the remarkable strength of both vessels. Mr. Shattock failed to produce either macroscopic or microscopic damage of the inner or middle coats of the human common iliac artery under the highest pressure possible with a dissecting-room syringe.

DAMAGE TO BONES

In regard to the skeleton, rigidity is a complicating factor. If the upper part of the shaft of the tibia is compressed over a small area in a vise, however slowly, extensive comminution and fissuring ensue far beyond the spot compressed. Nevertheless the same rule holds: the greater the velocity of the missile, the greater the damage. The classical example of explosive effect is the well known widespread comminution of the skull when bilaterally perforated by a rifle bullet at close range. The effects due to the gas of explosion must, of course, be excluded. The results of suicidal shooting are thus liable to lead to false conclusions; a rifle fired into the mouth with blank cartridge produces extensive comminution. This factor, however, is easily eliminated. Mr. Shattock has found, too, that sheep skulls with the brain in situ are extensively comminuted when shot through at 20 feet with a service rifle, the foramen magnum being freely open. The result is not, properly speaking, hydraulic but hydrodynamic—that is, it is not due to a generalized and equable internal pressure, but to the sudden impact of the incompressible cerebral substance against the interior of the cranium. A simple experiment emphasizes this. A large flat-sided cocoa tin was shot through in the empty state at 20 feet with a service rifle; a circular entry and exit of about the diameter of the bullet resulted. A second tin was filled with water and shot through, the lid being removed; the entry was small and circular, the exit widely split, with large triangular flaps of the metal completely everted. Mr. Shattock obtained pronounced explosive effects also in sheep skulls inverted and filled with water, the foramen magnum being freely open; if the skull was shot through in the empty condition, a circular entry and exit alone resulted.

Elizabeth Garrett Anderson

Mrs. Elizabeth Garrett Anderson, M.D., has died at the age of 81 years. She was one of the pioneers of the emancipation of women—the opening to them of work that had previously been confined to men—and was the first woman to secure a medical diploma in this country. She encountered many obstacles and even violent hostility, but continued her course with dauntless courage in the cause of what she regarded as justice. Elizabeth Garrett was born in Suffolk in 1836, and after her marriage was known as Mrs. Garrett Anderson. Her attention was attracted to medicine by Miss Elizabeth Blackwell, an Englishwoman who had emigrated to the United States, and, after many fruitless attempts to enter various medical schools there, was permitted to graduate with the degree of M.D. at the Medical Institution of Geneva, N. Y., in 1849. Ten years afterward, on the strength of this foreign qualification, and of her having prescribed for friends during a visit to England, she was put on the British Medical Register. Miss Garrett was the first woman to secure an English diploma, though Miss Blackwell had precedence of her as regards registration in this country. She began her medical studies in 1860, but encountered two great difficulties. No medical school would receive her, and no examining body would examine her. At the Middlesex Hospital the male students presented a memorial against the admission of women. She made repeated attempts elsewhere, only to be repulsed. After a time the Society of Apothecaries was

advised by its lawyer, Mr. Hanen, who afterward became a distinguished judge, that as the purpose of its charter was to enable it to sell drugs, and as there was no legal ground for refusing to allow a woman to sell drugs, the society could not refuse to admit a woman to the examination to its license. This license was one of the qualifications in those days that enabled a person to practice as a physician. The society, therefore, authorized Miss Garrett to get her education privately from teachers of medical schools, and in 1865 licensed her to practice. In 1866 she opened a dispensary in London for the benefit of poor women and children. In the meantime the Society of Apothecaries adopted a new rule that refused recognition of certificates granted for private study, and the late Miss Jex Blake and other women who followed in the footsteps of Miss Garrett had to go to Paris in order to obtain the M.D. degree. Miss Garrett was thus able to obtain assistance in her work at the dispensary, which she had been carrying on alone. From this dispensary developed the well known New Hospital for Women, which is staffed entirely by women physicians. In 1870, Miss Garrett became a candidate at the London school board election, and was returned at the head of the poll. In 1871, she married Mr. J. G. S. Anderson of the Orient Line of steamships, but she lost none of her zeal for the profession and continued to devote herself to the diseases of women and children. In 1874, Miss Jex Blake returned from Edinburgh, having failed to secure admission to the medical schools. Her attempt aroused so much feeling that she and her friends were mobbed by the male students. Mrs. Garrett Anderson thereupon joined with Miss Jex Blake and others in establishing the London School of Medicine for Women, which afterward became attached to the Royal Free Hospital. In 1876, a more enlightened public opinion and the excellent work done by Mrs. Garrett Anderson and other women physicians led to the passing of a bill in Parliament enabling the examining bodies to extend their examinations to women as well as men. The King and Queen's College of Physicians in Ireland was the first to take advantage of this enactment, but the feeling in the profession against women physicians remained strong, and Mrs. Anderson was the only woman member of the British Medical Association until 1892, when the rule that prevented the admission of women was repealed. For twenty-three years Mrs. Anderson was lecturer on medicine at the London School of Medicine for Women, and for ten years its dean. In 1896-1897 she was elected president of the East Anglian Branch of the British Medical Association, and in 1908 she was elected mayor of Aldeburg, where she had her home, being the first woman mayor in England. In her family are several distinguished members. Her sister, Dr. Garrett Fawcett, married Mr. Fawcett, the celebrated blind postmaster general, to whom she acted as medical adviser. Her son, Sir Alan Garrett Anderson, is controller of the navy. Her daughter, Dr. Garrett Anderson, organized the first hospital run by women at the front, and is now the head of a military hospital in London, staffed entirely by women.

PARIS LETTER

Paris, Dec. 27, 1917.

Treatment of War Wounds of the Lung

At a recent meeting of the Paris Société de Chirurgie, Dr. P. Duval, assistant professor in the Faculty of Medicine of Paris, and surgeon to the hospitals, reported on the surgical treatment by three operators in twenty-one cases of lung wounds: Hertz (thirteen cases), Vielle (seven cases) and Tanton (one case). These cases may be classified in three distinct groups: (1) urgent surgery for "open thorax," hemorrhage or asphyxia; (2) immediate removal of projectiles lodged in the lung, and direct treatment of the lung wound; (3) early intervention for pleuropulmonary complications. The mortality in this series was 38 per cent. (eight cases). In the group of twelve cases of hemorrhage or asphyxia, there were six deaths. The systematic treatment of lung wounds, excepting all urgency treatment, was carried out in four cases with 100 per cent. of success. The treatment of "open thorax" by simple parietal occlusion (two cases) resulted in 100 per cent. mortality. Finally, in four cases of pleuropulmonary sepsis treated by pleurotomy, progressive sterilization of the pleural cavity and secondary closure, the patients all recovered.

ANALYSIS OF RESULTS

These twenty-one cases enable one to make a survey of the results obtained with these various methods of treatment of wounds of the lung in the army. Immediate intervention for hemorrhage was indicated most often because the open thorax was accompanied by menacing external bleeding. The first group of twelve cases of pulmonary hemorrhage demonstrates again that this condition does not result fatally on the field, at the first aid station or during transport, but permits the wounded to go to the surgical ambulance. These cases also demonstrate the possibility and the necessity of an urgent thoracotomy to check the hemorrhage from the lung.

At the same meeting, Duval and Vaucher communicated the statistics on all lung wounds observed during two recent attacks in one surgical sector of the armies. These statistics include the results of the medical formations in the rear of the regimental first aid stations: evacuating stations, surgical groups and advanced surgical groups, and surgical automobiles. The total number of cases was 161, with a mortality of twenty-seven, or 16.7 per cent., including those dead on arrival at the sanitary formation, those who had been cared for, operated on or not, and those having many wounds, even when death was due to some other lesion than the lung wound. Of the 161 patients, thirteen were dead on arrival; twenty-nine had been operated on at once for hemorrhage, open thorax, or severe visceral trauma: the general mortality in these emergency operation cases was thirteen, or 44.8 per cent.

Duval and Vaucher insisted especially that a certain number of operations are necessary—not urgent—but for the purpose of extracting an intrapulmonary projectile, and the lung wound is then treated subsequently. Of the remaining 119 cases of lung wounds, in seventeen (14.2 per cent.) this treatment had been applied and expectant treatment was adopted in 102 (85.8 per cent.). The seventeen patients treated according to the general therapeutic principles usually employed in all cases of shell wounds recovered. In the 102 cases in which expectant treatment had been given, only one case terminated fatally, the result of a severe pleural infection proceeding from an unrecognized fracture of the scapula. Six cases of purulent pleurisy ended in recovery.

It is evident that the treatment of war wounds of the lung by early surgical intervention has yielded good results. These cases can and should be likened to any other war wound, and should, therefore, be treated in accordance with the same general and local principles. It seems incontestable that the application of this idea of treatment of these wounds of the lung has very notably improved the prognosis in these cases.

Primary and Secondary Suture of War Wounds

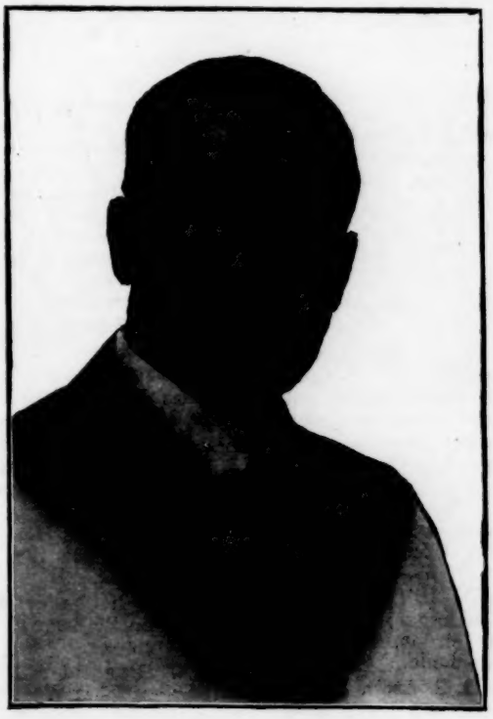
Dr. G. Potherat, surgeon in chief of the general surgical clinic, discussed this subject before the Paris Société de Chirurgie recently. Of 1,005 wounds of all kinds, 221 were sutured primarily and 459 secondarily. Among the former there were only two complete failures and eleven incomplete or partial failures. The former were due to an insufficient excision; the partial failures were due to insufficient hemostasis. Potherat states that he never sutures primarily when it is a question of a seton extending deeply, or with a sinuous track, or of grave bone fractures, or when the wound is more than twelve hours old. When he does not suture primarily, he endeavors to make a secondary suture according to the following technic: After systematic and thorough clearing out of the wound, he subjects it to continuous or intermittent irrigation, or applies a simple wet dressing with a 12.5 per cent. solution of magnesium chlorid to which 0.125 gm. of ammonium chlorid has been added. With this cytophylactic solution of magnesium chlorid, which he prefers to Dakin's solution (which sometimes causes burns and even sloughs), he obtains in from eight to ten days, at the latest, usually in two or three days, a complete arrest of suppuration and a falling of the temperature. Then, after having laved the wound well, even applying friction, with 1 or 2 liters of a lukewarm solution of magnesium chlorid, the wound is united either by suture, or, if the wound edges contact well, by means of adhesive or collodionized bands. Results are obtained more quickly if heliotherapy is used in conjunction with the magnesium chlorid.

Unsecured or Honor Loans to Prisoners of War

A large number of prisoners, whose pride forbade them from accepting gratuitous assistance from the Committee of Help (Comité de secours), have long been asking for the creation of a fund from which they could secure a loan to be repaid after the war. Such a fund has been created and placed under the auspices of the Central Office of Benevolent Works and of the agency for prisoners of war of the French Red Cross. The latter has set aside 10,000 francs ($2,000) for this purpose.

Deaths

Major Frederick Hadra, M. R. C., U. S. Army, San Antonio, Texas; aged 50; died at his station, Fort Shafter, Hawaii, December 28, from acute dilatation of the heart. Major Hadra was a native of Berlin, Germany, took his medical course at the College of Physicians and Surgeons in the City of New York, and later was graduated from the Texas Medical College and Hospital, Galveston, Texas, in 1890. From 1893 to 1898 he was surgeon of the First Texas Volunteer Infantry, and at the outbreak of the war with Spain was commissioned Major, First Texas Cavalry, U. S. V. On the muster out of this organization, he accepted a position as acting assistant surgeon, U. S. Army, and was ordered to Santiago, Cuba, where he served through the yellow fever epidemic, contracting the disease himself. In 1899 he was ordered to the Philippine Islands with the Thirty-Third Infantry, U. S. V., and participated in the battles of San Jacinto and Fagedin Pass, and was the surgeon accompanying the Gilmore Rescue Party. He served in the Philippine Islands for the second time in 1901 to 1903, and made his third trip to the islands in 1908. From 1909 to 1916, he practiced medicine in San Antonio. He then accepted a commission in the Medical Reserve Corps, was ordered to duty at Fort Bliss, Texas, and was transferred in January, 1917, to Schofield Barracks, Hawaii, and from there in September of the same year on duty to Fort Shafter, Hawaii, as post surgeon. Major Hadra was a Fellow of the American Medical Association, and had served as president of the Scientific Societies, and Pan-Hellenic Association of San Antonio. He was a man of charming personality much esteemed by all who knew him, and his death is a distinct loss to the military service.



Died in the Service

LIEUT. STEPHEN BALLARD RYBOLT, M.D.,
M. R. C., U. S. ARMY, 1874-1918

(*See The Journal, last week, p. 255*)

John Bassett Chapin, M.D., Canandaigua, N. Y.; Jefferson Medical College, 1853; aged 88; formerly a member of the Medical Society of the State of New York; once president of the American Psychological Association; medical superintendent of Brigham Hall, Canandaigua, N. Y., from 1860 to 1869; medical superintendent of the Willard (N. Y.) State Hospital from 1869 to 1884; physician in chief for the Pennsylvania Hospital for the Insane, Philadelphia, 1884 to 1911; who first recommended changes in asylum construction to provide for the segregation of the insane in detached blocks or buildings according to classes and conditions; the author of a number of monographs on the care and treatment of the insane; died at his home, January 17.

William Henry Lathrop, M.D., Lowell, Mass.; University of Pennsylvania, Philadelphia, 1865; aged 77; a member of the Massachusetts Medical Society; editor of the *Detroit Review of Medicine and Pharmacy* from 1865 to 1873; physician to the Detroit Retreat for the Insane for four years, and physician to the Wayne County Insane Asylum for two years; from 1875 to 1883 physician to the State Alms House; a veteran of the Civil War, in which he served as assistant surgeon to the Fifty-Fifth Massachusetts Volunteer Infantry, and also as acting assistant surgeon, U. S. Army; a member of the local school board from 1892 to 1900; died at his home, December 22.

William Hanna Thompson, M.D., New York City; Albany (N. Y.) Medical College, 1859; aged 84; a member of the Medical Society of the State of New York, and a fellow and once president of the New York Academy of Medicine; assistant physician to the Quarantine Hospital, New York City, 1859 to 1861, and medical inspector during the Civil War; for many years professor of medicine in the New York University Medical College; attending physician to Bellevue, Roosevelt, and the Manhattan State Hospital, Ward's Island, N. Y.; died at his home, January 18.

Albert H. Varney, M.D., Newfields, N. H.; Baltimore Medical College, 1892; aged 81; a practitioner since 1857; formerly a Fellow of the American Medical Association; a member of the New Hampshire Medical Society; in 1871 a member of the legislature from Newfields, and from 1867 to 1870 assistant surgeon of the Second Infantry, New Hampshire National Guard; for twenty-three years town clerk of Newfields, and for several terms a member of the board of selectmen; a member of the local board of health; died at his home, January 16.

William Ellery Jennings, M.D., Brooklyn; Bellevue Hospital Medical College, 1895; aged 43; formerly a member of the Medical Society of the State of New York; for sixteen years a member of the staff of the board of health of New York and Brooklyn, first as an inspector, then as a diagnostician, and at the time of his death on duty with the Wassermann clinic; also a graduate in pharmacy; died in the Lutheran Hospital, East New York, January 17, from pneumonia, following a surgical operation.

Thomas Prioleau Whaley, M.D., Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1892; aged 47; a Fellow of the American Medical Association, and a member of the Southern Surgical and Gynecological Association; professor of urology in his alma mater; died in the Baker Sanatorium, Charleston, January 14, from burns accidentally received, December 28, when his bathrobe caught fire from an open gas heater.

Thomas Joseph O'Donnell, M.D., Baltimore; University of Maryland, Baltimore, 1903; aged 38; formerly a member of the Medical and Chirurgical Faculty of Maryland; associate professor of surgery in Maryland Medical College, Baltimore, and chief of clinic to the chair of operative surgery, and chief of the outdoor surgical department of St. Joseph's Hospital, Baltimore; died at his home, January 9, from heart disease.

Henry Fleischner, M.D., New Haven, Conn.; Yale University, New Haven, 1878; aged 72; a Fellow of the American Medical Association; senior attending physician at St. Raphael's Hospital, New Haven; formerly attending physician at the New Haven Dispensary and New Haven Hospital, and president of the New Haven Board of Health; died at his home, January 20, from lobar pneumonia.

Henry Bidlack Reed, M.D., Milford, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 67; formerly major-surgeon of the Third Infantry, N. G. Pa.; district physician of the Philadelphia Dispensary; assistant demonstrator of anatomy and practical surgery in his alma mater; and chief of the ear clinic of the University Hospital, Philadelphia; died at his home, January 1.

George F. Nealley, M.D., Pleasanton, Kan.; Chicago Medical College, 1870; aged 75; a veteran of the Civil War; formerly a member of the Kansas legislature, and from 1883 to 1893 physician of the State Penitentiary, Lansing; and from that time up to four years ago examining surgeon at the Soldiers' Home, Leavenworth; died at his home, December 25, from cerebral hemorrhage.

Howard Malcolm Essick, M.D., Essick Heights, Pa.; New York University, New York City, 1881; aged 79; a member of the Medical Society of the State of Pennsylvania; for many years a practitioner of Picture Rocks, Pa., and proprietor of a large hotel at Essick Heights; died in the Mary M. Packer Hospital, Sunbury, Pa., January 12, from cerebral hemorrhage.

Capt. Richard Alfred Ireland, C. A. M. C., Guelph, Ont.; University of Toronto, 1911; aged 27; who went overseas in

July, 1915, and had been on duty in the front line for more than two years, including the battles of the Somme and Vimy Ridge; was killed while on active service with the Canadian Expeditionary Forces in France, in November, 1917.

William Cranston Post, M.D., Maquoketa, Iowa; College of Physicians and Surgeons in the City of New York, 1881; aged 68; formerly a member of the Iowa State Medical Society; a member of the consulting staff, and medical director of the Iowa Sanatorium, Maquoketa; died at his home, January 12, from cerebral hemorrhage.

Liser Augustus Bilisoly, M.D., Norfolk, Va.; Hahnemann Medical College, Philadelphia, 1855; aged 84; for more than twenty years surgeon of the Seaboard and Roanoke Railroad, and for many years surgeon of the Fourth Infantry, Virginia Volunteers; died at the home of his son-in-law in Norfolk, January 8, from bronchopneumonia.

Dodson Christian, M.D., Springdale, Ark.; Washington University, St. Louis, 1880; Bellevue Hospital Medical College, 1888; aged 66; a Fellow of the American Medical Association; vice president of the First National Bank of Springdale, and a member of the local board of education; died at his home, January 12, from angina pectoris.

Frank Webster Thomas, M.D., Claremont, Calif.; Starling Medical College, Columbus, Ohio, 1880; aged 64; a Fellow of the American Medical Association; formerly of Marion, Ohio, but since 1899 a resident of California; president of the Pomona Telephone Company; died at his home, December 12, after a surgical operation.

John Quincy Allen, M.D., Montrose, Colo.; Medical College of Indiana, Indianapolis, 1883; aged 63; a Fellow of the American Medical Association; proprietor of Telluride Hospital; while on his way to make a professional call at Cimarron, January 7, during a blinding snow storm, died in his automobile, from heart disease.

Peter Duncan Whyte, M.D., Pipestone, Minn.; College of Physicians and Surgeons, Chicago, 1902; aged 43; formerly a Fellow of the American Medical Association; also a graduate in pharmacy; for several years a practitioner of Hardwick, Minn.; died at his home, January 17, from intestinal obstruction.

Capt. Edward M. Sheehan, M. C., N. G., U. S., Independence, Iowa; Northwestern University Medical School, Chicago, 1905; aged 38; a Fellow of the American Medical Association; while serving with the First Infantry at Camp Cody, Deming, N. M., died from pneumonia, January 12.

Capt. Frank Keator, M. R. C., U. S. Army, Kingston, N. Y.; Albany (N. Y.) Medical College, 1903; aged 38; a member of the attending staff of the Kingston City Hospital; on duty at Camp Devens, Mass.; a Fellow of the American Medical Association; died at his home in Kingston, December 29.

Lieut. Robert Ellis Foster, M. R. C., U. S. Army, Carrollton, Ga.; University of Tennessee, Nashville, 1901; aged 44; a member of the Medical Association of Georgia; who had been on duty since June 30, 1917, at Camp Gordon, Ga.; died in the post hospital, January 12, from pneumonia.

Lieut. Alvah Roy Thompson, M. R. C., U. S. Army, Buckhead, Ga.; Eclectic Medical Institute, Cincinnati, 1911; aged 27; formerly a Fellow of the American Medical Association; local surgeon for the Georgia Railroad; died in Atlanta, Ga., December 22, from Hodgkin's disease.

John William Keough, M.D., Elizabeth, N. J.; College of Physicians and Surgeons in the City of New York, 1889; aged 57; for many years a member of the staff of the Elizabeth Emergency Hospital; died at his home, January 2, from bronchial pneumonia.

Herbert William Catlin, M.D., Grand Rapids, Mich.; Detroit Medical College, 1883; aged 56; formerly a member of the Michigan State Medical Society; died in St. Mary's Hospital, Grand Rapids, January 15, after an operation for gastric ulcer.

Marion G. Chancey, M.D., Tampa, Fla.; University of the South, Sewanee, Tenn., 1903; aged 41; a Fellow of the American Medical Association; died at the home of his parents in Pierce County, Ga., January 8, from tuberculosis.

John G. McKinney, M.D., Barry, Ill.; Rush Medical College, 1868; aged 81; a member of the Illinois State Medical Society; formerly president of the Pike County Medical Society; died at his home, December 3, from senile debility.

Max Toeplitz, M.D., New York City; University of Freiburg, Germany, 1883; a member of the New York Otological Society; a specialist on diseases of the ear, nose and throat; died at his home, January 13, from pneumonia.

Charles Taylor Jewett, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1868; aged 70; a member of the Medical Society of the State of New York; died at his home, January 18.

Maxwell Goldman, M.D., Boston; Boston University School of Medicine, 1913; aged 25; widely known for his charitable work among the poor of the West End, Boston; died at his home, January 14, after a long illness.

Everett Russell Smith, M.D., South Pasadena, Calif.; Rush Medical College, 1873; aged 71; formerly a Fellow of the American Medical Association; died in Los Angeles, November 17, from myocarditis.

Edward Fifield Root, M.D., East Burke, Vt.; Dartmouth Medical School, Hanover, N. H., 1893; aged 55; formerly a member of the Vermont State Medical Society; died at his home, January 6.

Theodore F. Livengood, M.D., Elizabeth, N. J.; University of Pennsylvania, Philadelphia, 1875; aged 68; a Fellow of the American Medical Association; died at his home, January 12, from pneumonia.

Hubert Anton Sumpmann, M.D., Dubuque, Iowa; Chicago Homeopathic Medical College, 1890; College of Physicians and Surgeons, Chicago, 1896; aged 53; died at his home, January 8.

George Adolphus Newton, M.D., Point Place, Toledo, Ohio; University of Michigan, Ann Arbor, 1877; aged 62; died in Robinwood Hospital, Toledo, January 7, from pernicious anemia.

Benjamin Gordon Boyce, M.D., Springboro, Pa.; Cleveland Homeopathic Medical College, 1903; aged 44; a veteran of the war with Spain; died at his home, January 6, from nephritis.

Glover D. Martin, Beaumont, Texas (license, Texas, act of 1907); aged 45; a practitioner for twenty-four years; died at his home, January 5, from chronic interstitial nephritis.

William M. Arnold, M.D., Larned, Kan.; College of Physicians and Surgeons, Keokuk, Ia., 1867; aged 79; died at his home, December 5, from mitral insufficiency.

George L. MacKinnon, M.D., Alton, Ont.; University of Toronto, Ont., 1905; aged 34; died at his home, September 16, from carcinoma of the rectum.

Charles Israel Kelly, M.D., Hamilton, Ont.; McGill University, Montreal, 1891; aged 49; died in a hospital in Tucson, Ariz., December 29.

J. Oscar Brown, M.D., Big Cabin, Okla.; University of Louisville, Ky., 1909; aged 31; died at his home, December 31, from pneumonia.

A. E. Horn, M.D., Hot Springs, Ark.; University of Tomsk, Siberia, 1868; aged 77; died in the State Hospital, Little Rock, January 4.

Harry Smith Chaffee, M.D., Rochester, Vt.; University of Vermont, Burlington, 1896; died at his home, January 1, from tuberculosis.

John W. Bradfield, M.D., Charlotte, N. C.; Kentucky School of Medicine, 1882; died at his home, January 4.

Marriages

CAPT. WHALEN AUGUSTUS MORRISON, M. R. C., U. S. Army, Los Angeles, on duty at base hospital, Camp Dix, Wrightstown, N. J., to Miss Lucile Gertrude Phillips of Los Angeles, in New York City, December 27.

ASST. SURG. DREW WILLIAM LUTEN, U. S. N. R. F., St. Louis, on duty at Great Lakes, Ill., to Miss Sarah Augusta Pack of Roanoke, Va., December 22.

LIEUT. HOWARD BARTON SWAN, M. R. C., U. S. Army, to Miss Mildred May, both of Chestertown, N. Y., January 12.

ALEXANDER L. BLACKWOOD, M.D., Chicago, to Miss Sylvia Bell of South Chicago, Ill., in Toronto, January 16.

CLARK E. CONGDON, M.D., Fort Plain, N. Y., to Miss Hester Helena Burgor of Schenectady, N. Y., January 9.

DONALD PUTNAM ABBOTT, M.D., to Miss Marion Dummer, both of Chicago, January 14.

WILLIAM CURTIS GIBSON, M.D., to Miss Helen Borum, both of Suffolk, Va., January 9.

DEFOREST WEEKS, M.D., to Miss Addie B. Wagner, both of Portland, Me., January 8.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

[FOREWORD.—The article that follows is the fifth[1] of a series written primarily for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures. Although the preparations which will be taken up in this series have been extensively dealt with in previous reports, the fact that they are still widely advertised and sold indicates the need of further publicity. The series is written by a man who is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE V]

AMMONOL AND PHENALGIN

By S. Q. Lapius, M.D.

At the time when synthetic chemical drugs were coming into fame and when every manufacturer who launched a new headache mixture claimed to have achieved another triumph in synthetic chemistry, Ammonol and Phenalgin were born. Of course these twins of analgesic pseudotherapy were claimed to be synthetics and were duly christened with "formulas." They were among the first of the nostrums examined for the Council on Pharmacy and Chemistry, and the false claims made for them were exposed.

The analyses made for the Council showed that Ammonol and Phenalgin were simple mixtures having the following composition:

	ACETANILID	SODIUM BICARBONATE	AMMONIUM CARBONATE
AMMONOL	50	25	20
PHENALGIN	57	20	10

The reports of the Council on, and numerous references to, these two nostrums may be found in THE JOURNAL of various dates.[2] The reports will prove interesting to those who are not familiar with, or have forgotten, the methods of nostrum exploiters at the time the Council was formed. Following the Council's exposure of the false claims made by the manufacturers of Phenalgin, the *Medical Record* published an advertisement of that nostrum in which an attempt was made to discredit the Council's report. The editor of the *Medical Record* was requested by the Council to publish the facts in the case but he refused to do so.

Long after the death of Dr. Cyrus Edson the claim was made that Phenalgin was made under his direction and that it was his "discovery." As a matter of fact, Dr. Edson had favored the use of Ammonol at one time, and when the Council exposed the false claims then being made for Phenalgin, THE JOURNAL charged that a fraud was being perpetrated on the medical profession. Despite the exposure of the methods used in exploiting Ammonol and Phenalgin, one finds just as glaringly false statements made in the advertisements of Phenalgin today as were made in its unsavory past. This would seem to indicate either that physicians have short memories or that they are strangely indifferent to the welfare of their patients, to their own reputations and to the good name of medicine.

1. The previous articles of the series are "Bell-ans," THE JOURNAL, Nov. 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Pepto-Mangan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918.

2. THE JOURNAL, June 3, 1905, p. 1791; June 24, 1905, p. 1997; Sept. 23, 1905, p. 935; Jan. 13 and 27, 1906, pp. 134-290; Jan. 27, 1912, pp. 280-293.

The *New York Medical Journal* of Dec. 22, 1917, contained an advertisement of Phenalgin—it has been running for months—from which the following is quoted:

> "For the relief of PAIN the 'logical supplanter of opium and other habit-forming drugs' is PHENALGIN. No matter how severe or where located pain is promptly and satisfactorily controlled by this effective anodyne—and without disturbing the digestion, suppressing the secretions, causing constipation or inducing a drug habit.
>
> "This is why Phenalgin has superseded opium and its derivatives for relieving HEADACHES, RHEUMATISM, GOUT, LA GRIPPE, LUMBAGO, NEURALGIA, DISORDERS OF THE FEMALE, DYSMENORRHEA, AND PAINFUL CONDITIONS GENERALLY. To thousands of physicians Phenalgin 'is the one dependable analgesic—the logical supplanter of opium.'"

If we are to suppose that the composition of Phenalgin is today essentially the same as when it was examined, the claims just quoted are obviously false for, of course, such a mixture must have the properties of acetanilid with all of its drawbacks and limitations. We may contrast the statements made in the advertisement just quoted with those made in *Bulletin 126* of the Bureau of Chemistry of the U. S. Department of Agriculture. This bulletin on "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin" summarizes the replies received from four hundred physicians to whom a questionnaire had been sent. The information thus gained was tabulated and the figures that follow are from these tables. There were reported no fewer than 614 cases of poisoning by acetanilid with 16 deaths and 112 cases of its habitual use. The larger number of the cases of poisoning followed the administration of the drug by physicians in doses larger than those now regarded as fairly safe. This large number reported by only four hundred physicians indicated an excessively large number in the whole country. Since the questionnaire was sent to nearly a thousand physicians, of whom about five hundred failed to reply, it may be assumed that had it been sent to the entire one hundred and thirty thousand physicians in the country, at least seventy-five thousand cases of poisoning would have been reported.

Prior to the passage of the federal Food and Drugs Act (the "Pure Food Law") many nostrum makers had declared that their preparations contained no acetanilid. When that law went into effect some of these manufacturers triumphantly pointed to the fact that they were still able to make the same claim without conflicting with the requirements of the law. This was accomplished in fact by changing the formula and substituting acetphenetidin (phenacetin) for the acetanilid. While acetphenetidin is somewhat less toxic than acetanilid bulk for bulk, the toxicity and therapeutic activity of the two drugs are nearly proportional.

The claim made by many proprietary medicine manufacturers that they are "strictly ethical" because they advertise only to physicians is mere verbal camouflage. There may be no more certain way of insuring the continued use of a nostrum by the public than to have it prescribed by physicians and none know this better than the makers of nostrums. A proprietary individuality is obtained by giving some special form to the tablets and package or a special coloring of the capsules ("Specify 'Phenalgin Pink Top Capsules'") so as to indicate the identity of the products in such a way that the patient may in the future procure them without the advice or warning of the physician. When a proprietary preparation with the name or initials stamped on it or attached to it is prescribed the patient immediately is aware of the fact, and his respect for the physician's intelligence and wisdom is naturally lessened.

The physician should never place such dangerous drugs as acetanilid and acetphenetidin or ready-made mixtures of them in the hands of the patient in such a way that they can be employed without his supervision or control. He should never prescribe more than is needed at the time and should not form the habit of using fixed doses or combinations of drugs without a special reference to the particular needs of the individual.

Certain forms of headache yield more readily to a mixture of caffein and acetanilid or caffein and acetphenetidin than to either acetanilid or acetphenetidin alone. When the physician wishes to prescribe such a mixture he may combine one grain of caffein or two grains of citrated caffein with three grains of acetanilid or four grains of acetphenetidin in a powder or

capsule. Under supervision such a dose may be repeated at intervals of from two to four hours if necessary to control pain. It is necessary to remember, however, that when small doses fail to give relief, increase in the dose is useless. This fact is especially important, and disregard or ignorance of it has been responsible for many cases of poisoning. Further, it should be remembered that while it was taught for many years that the admixture of caffein with acetanilid lessened the effect of the latter drug on the heart, Hale has shown that this is not the case and such mixtures must be used with special caution.

Correspondence

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—It is with great pleasure that I acknowledge additional contributions by medical and nonmedical donors of money and instruments for the rehabilitation of the civilian doctors of Belgium and France so they can gradually go back to their desolate and looted homes when the Germans (thank heaven) have been driven out.

I feel that it is especially proper to note the gifts of several nonmedical friends whose sympathies have been so generously expressed.

Dr. Solomon Hyman of San Franciso took the trouble to reprint the appeal which I had published in THE JOURNAL, and appended an appeal of his own and sent the document to the profession in San Francisco. Dr. Hyman also collected a large number of instruments from the profession in San Francisco. These were generously packed by Percy J. Myer & Co., the instrument makers in San Francisco. The large case was forwarded to me across the continent free of expense.

Adding the cash acknowledged in this list, the sum total so far forwarded is $1,858.34.

Charles Lentz & Sons of Philadelphia have put all the instruments that needed it in order, and have generously packed these cases without charge. The cases thus far sent represent a value, according to their estimate, of $4,000.

I shall be very glad to receive further contributions both in cash and instruments and forward them to Belgium and France.

I beg the donors of instruments kindly to have them put in order before sending them, as this cannot be readily done in Belgium or in France.

W. W. KEEN, M.D.

1729 Chestnut Street, Philadelphia.

SUBSCRIPTIONS IN CASH

Dr. F. W. Spaulding, Clifton Springs, N. Y.	$ 5.00
Dr. Joseph Walsh (second contribution), Philadelphia	5.00
Dr. Horace W. Soper, St. Louis	50.00
Mr. Henry G. Keasbey, Philadelphia	50.00
Dr. John T. Bottomley, Boston	10.00
Mrs. Arthur H. Lea, Philadelphia	100.00
Dr. Mary Brown, Swarthmore, Pa.	25.00
"A Member of the Belgian Relief Committee," through Mrs. Bayard Henry, Philadelphia	100.00
Dr. B. R. Swan, San Francisco	20.00
"A Friend," Philadelphia	10.00
Mrs. Sydney Biddle, Philadelphia	200.00
Dr. W. C. Cahall, Philadelphia	3.90
Dr. Clarence T. Faries, Narberth, Pa.	10.00
Mr. Frederick C. Leas, Philadelphia	5.00
Dr. Arthur G. Hodgins, Honolulu	50.00
Dr. Joseph Prendergast, Chicago	5.00
Dr. Frank Lee Barrows, Moscow, Ida.	10.00
Dr. George H. Weaver, Chicago	5.00
Dr. John McFadzean, Del Norte, Colo.	5.00
Dr. John F. Gibbon, San Francisco	5.00
Dr. Xavier Dodel, San Francisco	1.00
Dr. W. C. Cahall (second contribution) Philadelphia	6.00
Dr. Henry Barton Jacobs, Baltimore	50.00
The interest account is $3.34.	$730.00

INSTRUMENTS

Dr. Solomon Hyman, Dr. Charles G. Levison, Dr. Morris Hertzstein, Dr. William F. Blake, Dr. Henry Harris, San Francisco; Dr. J. K. Miller, Greeley, Ohio; Dr. Walter J. Freeman, Dr. W. W. Keen, Philadelphia; Dr. H. H. Hammond, Van Buren, Maine; Dr. William B. Van Note, Lima, Ohio; Dr. F. P. McCarthy, Erie, Pa.; Dr. W. L. Hartman, Pittston, Pa.; Dr. Sara T. Chase, Traverse City, Mich.; Dr. Lloyd Mills, Los Angeles; Dr. H. J. Morgan, Toledo, Ohio.

Dr. Hartland Law of San Francisco bought several dozen hemostatic forceps and dressing scissors and sent them directly to Paris.

"THE VENEREAL DISEASES"

To the Editor:—May I tell you how much inspiration has come to us through the series of articles published in THE JOURNAL recently on the treatment of venereal diseases?

Among our students there has grown a strong conviction that the Chinese public needs education to prepare it for the crop of modern trained physicians now being educated. The students have translated several of the articles referred to, and I write on their behalf to tell you that we propose to use the translated material in the local press, making due acknowledgment to THE JOURNAL.

E. H. HUME, M.D., Changsha, China.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FONTANA'S STAIN FOR SPIROCHAETA PALLIDA

To the Editor:—Will you kindly give the technic of Fontana's stain for *Spirochaeta pallida?* V. A. L., M.D., Chicago.

ANSWER.—Fontana's method involves the use of the following preparations:

1. Fixing fluid: acetic acid, 1 c.c.; Solution of Formaldehyde, U. S. P., 20 c.c.; distilled water, 100 c.c.

2. Mordant: tannic acid, 5 gm.; phenol solution (1 per cent.), 100 c.c.

3. Silver solution: A 0.25 per cent. solution of silver nitrate is prepared. This may be done with sufficient accuracy by dissolving a small crystal in half a test tube of distilled water and adding just enough ammonia solution to cause a slight permanent turbidity.

4. Distilled water.

Process: 1. Prepare the slide to be stained by spreading the material from the syphilitic lesion very thinly on a clean slide, allowing it to dry spontaneously. 2. Fix by pouring on the fixing fluid, pouring it off after a few seconds. Renew it immediately and perform this process several times. The total duration of this stage should be not less than a minute. 3. Wash well in distilled water. 4. Flood with the mordant, apply gentle heat till steam arises, and continue this process for half a minute. 5. Wash thoroughly in distilled water (from fifteen to thirty seconds). 6. Flood with the silver solution; then warm gently for half a minute, wash, blot and dry. Mount in balsam for permanent specimens. Cedar oil causes the spirochetes to pale. The spirochetes are stained jet black, and appear larger than when stained by ordinary methods.

Fitting the Crippled Soldier for an Occupation.—In deciding which of the available courses an individual disabled soldier should pursue, the first effort should be to fit him for an occupation related as closely as possible to his former job. His past experience—far from being discarded—should be built upon. A competent journeyman bricklayer who has lost an arm may be prepared by a suitable course in architectural drafting and the interpretation of plans to take a position as construction foreman of a bricklaying gang. It were idle to give such a man a course in telegraphy. But a train hand who has been all his life familiar with railroad work may most wisely be trained as a telegraphic operator, with a little commercial instruction on the side. This man will then be fitted to obtain employment as station agent at some minor point on the road. There is an additional advantage in instances such as the two mentioned in that the former employer will be willing to engage again a man with whose record and character he is familiar—once there is assured the competence of the ex-soldier in his new capacity.—Douglas C. McMurtrie: The War Cripple, Columbia War Papers.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALASKA: Juneau, March 5. Sec., Dr. L. P. Dawes.
CALIFORNIA: Los Angeles, Feb. 18. Sec., Dr. Charles B. Pinkham, State Capitol, Sacramento.
CONNECTICUT: New Haven, March 12-13. Sec., Dr. Charles A. Tuttle, New Haven.
CONNECTICUT (H): New Haven, March 12. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven, Conn.
ILLINOIS: Springfield, Feb. 6-7. Supt. F. C. Dodds, Springfield.
IOWA: Des Moines, Feb. 5-7. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, Feb. 12. Sec., Dr. H. A. Dykes, Lebanon.
MAINE: Portland; March 12-13. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
MASSACHUSETTS: Boston, March 12-14. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.
MISSOURI: St. Louis, March 19-21. Sec., Dr. George H. Jones, Capitol Bldg., Jefferson City.
VERMONT: Burlington, Feb. 12. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Laramie, Feb. 6-8. Sec., Dr. H. E. McCallum, Laramie.

Kentucky Reciprocity Report

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports four additional candidates licensed through reciprocity to and including Oct. 5, 1917. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1916)	Georgia
Eclectic Medical College		(1914)	Ohio
Miami Medical College		(1904)	Ohio
Jefferson Medical College of Philadelphia		(1910)	N. Carolina

Maine November Examination

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Portland, Nov. 13-14, 1917. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1915)	85
Baltimore Medical College		(1906)	84
Boston University		(1884)	79
Tufts Medical College	(1898) 76;	(1917)	91
	FAILED		
Chicago College of Medicine and Surgery		(1916)	78*

*Fell below 60 in one subject.

Book Notices

THE PRINCIPLES OF MENTAL HYGIENE. By William A. White, M.D. With an introduction by Smith Ely Jelliffe, M.D., Ph.D. Cloth. Price, $2. Pp. 323. New York: The Macmillan Company, 1917.

In no sense is this a textbook or manual. It might be said to consist of essays on human conduct or, perhaps better, essays on the vagaries of human conduct. It concerns the insane, criminal, feebleminded, inebriate, pauper, faddist, and others unable normally to adjust themselves to their environment. As an effort to take the broad problems of mental hygiene out of the domain of philanthropy and place them in the realm of science, the work is most praiseworthy and useful. As a guide in the management of the insane or the conduct of present societies of mental hygiene, it will be of only limited value. Such a handy guide it does not pretend to be, aspiring rather to expound the "principles involved in the concepts of the great defective, delinquent and dependent groups . . . and the principles of society's relations to them." On page 99 the author says, "The new psychology is beginning dimly to recognize that the psychosis is originally a failure in the individual-society relation, and as such demands a study not only of the individual as such but of the relation." The same applies to criminality, prostitution and other antisocial or unsocial manifestations. Dr. White's presentation of this study is intelligent, interesting and instructive. And not the least helpful part of the book are the illuminating side lights he throws on the mental processes and activities of such of us as a lenient society considers to be normal. To have thrust on our attention the marvelously similar reactions of the judge and the offender he sentences, of the asylum physician and the maniac he puts in restraint, is occasionally decidedly wholesome. The psychiatrist, the criminologist, the psychologist and the practical philanthropist who are trying to use their brains in their work will read this book with great pleasure and considerable profit.

MEDICAL RESEARCH AND HUMAN WELFARE. A Record of Personal Experiences and Observations During a Professional Life of Fifty-Seven Years. By W. W. Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College, Philadelphia. The Colver Lectures, Brown University, 1917. Cloth. Price, $1.25 net. Pp. 160. Boston: Houghton, Mifflin Company, 1917.

This booklet represents the Colver lectures at Brown University during 1917. The subtitle of the book is "A Record of Personal Experiences and Observations During a Professional Life of Fifty-Seven Years." As most physicians know, the past fifty-seven years have witnessed more progress in scientific medicine than perhaps the previous fifty-seven centuries. Dr. Keen traces the growth of the science in a pleasantly retrospective mood, showing the great part that medical research has taken in conferring on the world the benefits of modern medicine. He gives brief attention to all of the phases of infection, of modern sanitation, of modern surgery, of the control of great plagues, and of research in plant and animal pathology and bacteriology. In his conclusion he points out that every disease named has witnessed during his own professional lifetime a notable mitigation of its ravages, or even its actual or prospective total annihilation. "When the Great Peace shall follow the Great War," he says "one conflict will *not* stop. The war of our guild against Disease—as old and as eternal as the war between Ormuzd and Ahriman, between Good and Evil—will never cease until the last disease has been conquered and Humanity has been set free." He looks forward to the day when case histories will read, "had the usual health of childhood" instead of the "usual diseases." His final sentence gives the keynote of the book.

"Research, *Research*, RESEARCH—that is the method by which we shall enter into the Paradise of Health, and not for childhood only, but a lifelong Paradise, till Death shall come, not as our last enemy, but as our best friend, to open to us the gates of Immortality."

RE-EDUCATION; AN ANALYSIS OF THE INSTITUTIONAL SYSTEM OF THE UNITED STATES. By George Edward Barton, A. I. A., Director of Consolation House. Cloth. Price, $1 net. Pp. 119. Boston: Houghton Mifflin Company, 1917.

After setting forth figures and quoting various authorities as to the enormous expenditures for hospitals and other public and semipublic institutions for the care of the sick, the afflicted and the criminal, the author makes a plea for utilizing in useful production and occupation the time of the inmates of all these institutions to a greater extent than at present. He declares that patients in general hospitals even for comparatively short periods could be employed for at least a part of their stay, and that every one in institutions of the sort named would be better off for such occupation. Cripples of all sorts and persons of substandard degrees of health and strength should be reeducated to tasks and occupations suitable for their several capacities, which is in line with the activities of the nations at present charged with the responsibility of the welfare of those wounded in the world war. A thorough reorganization of the institutions referred to, with this end in view, should be undertaken.

A PRACTICAL DIETARY COMPUTER. By Amy Elizabeth Pope. Cloth Price, $1.25. Pp. 170. New York: G. P. Putnam's Sons, 1917.

Practically the whole of this book is devoted to the publication of tables on foods and food values, most of them taken from standard reference works, government publications, and special bulletins. The book is divided into three parts, the first giving general information as to methods of calculation

of food values and lists of foods relatively rich in special constituents; the second, tables showing the chemical composition and caloric value of common foods and beverages; the cost, chemical composition and caloric value of some special dietary foods, and the average relative carbohydrate content of various foods; the third, weights, measures and recipes in common use. The book should prove a valuable reference work for dietitions and others interested in scientific cooking.

Obstetrics for Nurses. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. Fifth Edition. Cloth. Price, $2.75 net. Pp. 550, with 235 illustrations. Philadelphia: W. B. Saunders Company, 1917.

Dr. DeLee's book has gone through the usual revision, expansion and modification to bring it up to the hour. New illustrations have been added, and especially more matter has been included relating to operating room technic. A new feature is an outline of a teaching scheme for obstetric nursing classes by Miss Nancy E. Cadmus of the Manhattan Maternity, New York.

Medicolegal

Certificates Must Be Filed for Record as Prescribed

(Lynch vs. Kathmann et al. (Ia.), 163 N. W. R. 408)

The Supreme Court of Iowa, in this action brought by a practicing physician and surgeon to recover on an account for medical services of the alleged reasonable value of $361, affirms a judgment in favor of the defendants for costs, because the plaintiff had not filed his certificate for record in the office of the county recorder as required by Section 2577 of the Iowa Code, although he had caused it to be recorded in the office of the clerk of the district court of the county, in a book in the office entitled "Register of Physicians and Midwives," and had been informed by the clerk that such registration was in full compliance with the laws of the state with reference to the recording of the certificate. The court holds that, having failed to comply with the law requiring him to file his certificate for record in the office of the county recorder, he could not maintain this action for the value of the services rendered. The statute makes it an indictable misdemeanor to engage in the practice of medicine "without having first obtained and filed a certificate." The certificate must be obtained from the state board of medical examiners and filed in the office of the county recorder. The purpose and object of requiring the recording of the certificate can be met only by having it recorded in the office designated by law.

The requirements of the statute that, before one engages in the practice of medicine, a certificate must first be obtained and filed by every person attempting to practice medicine in the state of Iowa, are mandatory, and no right exists in favor of any one so to engage in the practice of medicine until he has complied with all the requirements of the statute. Not only are these statutes mandatory in character, but they are founded on principles of sound public policy. They are not intended to interfere with the right of any person to adopt and follow any lawful vocation which he may choose, but only to require that before engaging to deal with the public in matters of such grave importance as the practice of medicine he shall first satisfy the proper authorities of his qualifications and comply with the conditions required by law to be performed by him before engaging in the practice of this profession.

Statutes prescribing the qualifications for the practice of medicine and regulating the practice thereof are not alone for the protection of the public, but as well for the protection of the members of the medical profession. It affords them protection against the fraudulent schemes and practices of incompetent, dishonest and designing quacks who seek to impose on the credulity of the people and thereby tend to destroy the high character and aim of the profession and bring it into disrepute.

The purpose of causing the certificate to be recorded is evidently to give full publicity to the fact that the holder has passed the required examination and possesses the requisite qualifications and is deemed worthy by the board of medical examiners to practice medicine in the state of Iowa, and to provide a convenient method of apprising the public thereof. This method would seem to be a reasonable regulation. The record of such certificate is, by special provision of statute, open to public inspection. No restrictions shall be placed on the right of the public by the custodian of such record to examine and inspect it. The question is not one of good faith on the part of the holder of the certificate, but of conformity to conditions imposed by the legislature on the holder thereof which must be complied with by him before he is authorized by law to practice medicine.

Allowed Use of Dictated Hospital History—Evidence in Abortion Case

(State vs. Fletcher (N. J.), 101 Atl. R. 181)

The Court of Errors and Appeals of New Jersey, in affirming a conviction of the defendant of having performed a criminal abortion, holds that it was proper to allow a physician to use his hospital history to refresh his recollection, although it was dictated by him to another, and not transcribed in his presence, it being identified by him as a transcription of the notes he dictated at the time. No more proof was necessary to justify its use.

It was permissible to use the speculum offered in evidence to illustrate the kind of an instrument which the girl said the defendant had used.

The cross-examination of the defendant as to her acquaintance with a certain doctor was permissible, she having testified on direct examination that her patient told her she had come from a doctor in New York, and on cross-examination having said the girl gave her the name of said doctor. Her knowledge of the doctor might throw light on the probability that she would perform an abortion on a girl who claimed to have been sent by him.

Nor was the defendant injured by the charge to the jury that "the fact that this young woman had a previous miscarriage or visited some one else is not finally to affect your minds in determining this defendant's guilt. If she had had ninety-nine other operations and somebody else gone free, that is not the question." The court infers that the judge was trying to warn the jury not to convict the defendant because they thought some one else ought to be punished. It seemed to be intended as a warning in favor of the defendant.

The court also thinks it was permissible to ask the defendant if she couldn't give the girl something to alleviate the pain, the defendant having testified that the girl had come to her suffering pains of pregnancy and wanting her to perform an abortion; that she had refused to do so, and offered to do nothing to alleviate the pain. The question bore on the probability of the defendant's testimony, since the prosecutor might well argue that the natural instinct of humanity would lead the defendant to alleviate the pains if she was unwilling to perform the abortion.

For What a Physician May and May Not Keep Intoxicating Liquors

(State vs. Chamberlin (Ia.), 163 N. W. R. 428)

The Supreme Court of Iowa, in affirming a judgment assessing a fine of $700 against the defendant on a conviction of maintaining a liquor nuisance, says that while the defendant was a physician and entitled to keep intoxicating liquors for use in his practice, yet this did not give him the right to keep liquors for sale and to engage in that kind of traffic. The jury was instructed that, if the evidence showed beyond a reasonable doubt that the defendant had made a sale of intoxicating liquors, a presumption would arise that the sale was illegal, but that, if the jury had a reasonable doubt as to the illegality of the sale, then the presumption would be overcome, and it would not be warranted in finding that the sale was illegal. This instruction was evidently based on section 2427 of the statute.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirtieth Annual Meeting, held at St. Augustine, Fla., Dec. 18-20, 1917

(*Continued from page 266*)

Traumatic Rupture of the Spleen

DR. A. MURAT WILLIS, Richmond, Va.: The four cases that I report presented the following points in common: They were all in males; there had been a blow on the left side of the body in the splenic region; secondary anemia and leukocytosis were present; there was no external evidence of injury about the body; there were rigidity and tenderness of the abdomen; all had shock following splenectomy; all the spleens were practically normal in size with short pedicles and without any history of previous disease of the organ. Three of the four patients had agonizing pain in the left shoulder, which was promptly relieved by splenectomy. In two of the cases a marked increased leukocytosis persisted after the operation over a period of from two to four weeks. Three patients had satisfactory convalescence. One died eight days after operation. The fatal case showed a continuous fall in hemoglobin and a decreasing leukocyte count. In the first two cases, operation was followed by direct transfusion with apparently good results.

DISCUSSION

DR. EDWARD H. OCHSNER, Chicago: Is the difference in the reaction to operation by patients and dogs explained by the presence of supernumerary spleens in the cases with favorable outcome? Many patients have an immunity, so that they, too, survive a splenectomy. I believe that a little spleen tissue is absolutely essential to life.

DR. F. G. DU BOSE, Selma, Ala.: I should like to ask Dr. Willis if there was any enlargement of the lymph glands in his cases. I saw a man with a ruptured spleen who, after the removal of his spleen, developed a general lymphadenitis; otherwise his blood and general condition were apparently improved by the operation. Within a year the lymphadenitis subsided.

DR. A. MURAT WILLIS, Richmond, Va.: There was no lymphoid enlargement in our cases. Not all of these cases reacted alike, and what Dr. Ochsner said is along the right line.

Management of Subparietal Injuries of the Kidney

DR. J. M. MASON, Birmingham, Ala.: I have treated three cases of subparietal injuries to the kidney. 1. After rupture of the right kidney from a fall from a train, death occurred in twenty hours from hemorrhage and shock while preparations were under way for exploration. 2. A contusion or slight laceration of the right kidney, due to a fall from an electric light pole, was complicated by fractured ribs, fracture of the neck of the left femur, and fracture of the right iliac crest. These complications prevented exploration of the kidney injury. The hematuria disappeared at the end of four days, with clearing up of the kidney symptoms, and recovery without operation. 3. A patient, who had sustained a rupture of the left kidney from being knocked down by an automobile, had hematuria, fever, pain, tenderness and a tumor over the left kidney. The kidney was found deeply ruptured in two directions. Nephrectomy was followed by recovery. In all these cases the sources of the hemorrhage and the presence of a second functionating kidney were determined by cystoscopy.

Injuries of the Spine

DR. JOSEPH RANSOHOFF, Cincinnati: Of sixteen cases of injury to the cervical spine, six patients died within from twelve hours to two weeks. In none of these cases was a laminectomy performed. Three of these fatal cases were attended with considerable shock. They were complicated with fractures of the skull, a complication that is far more frequent than is ordinarily supposed. In all of the cases, with one exception, the paraplegia was synchronous with the receipt of the injury. In only one case, a stab wound, causing fracture of the spinous process and body of the vertebra, did the paraplegia come on several hours after the injury, as a result of hemorrhage. There had been no displacement of the segment. In the remaining cases there were for the most part no symptoms whatever referable to the cord or nerve roots, the result of pressure on the nerves and their branches through the intervertebral foramina. Limitation of motion and some pain, with a fixed deformity, were the only evidences of fracture shown by the roentgen ray. I cannot emphasize too strongly the value of taking the picture through the mouth. There was only one case of what seems to be a pure dislocation, but even in this the roentgen ray showed a slight fracture of the body. The discrepancy between the fatal outcome and the roentgenogram was shown in many instances, because in these the roentgenogram showed a nearly normal spine, evidently proving the contention that the spontaneous reduction, the result of the handling of the patient, often occurs. An interesting case was a shot wound, which, without producing any fracture of the spine, caused contraction of the cord, particularly of the pyramidal tract, and of the gray matter in the region of the seventh cervical and first dorsal vertebrae. The ciliospinal center was contused, and followed by the typical contraction of the pupil, exophthalmos, and slight ptosis on the side of the injury. At the operation the sympathetic nerve cord was found uninjured, thereby accounting for the absence in this case of the unilateral sweating and flushing of the face that usually attends wounds of the cervical sympathetic nerve cord itself.

(*To be continued*)

WESTERN SURGICAL ASSOCIATION

Twenty-Seventh Annual Meeting, held at Omaha, Dec. 14 and 15, 1917

(*Continued from page 265*)

Artificial Vagina

DR. A. W. ABBOTT, Minneapolis: All reported cases to date in which the bowel is used to line the new vagina have followed the Baldwin method of utilizing a loop of the ileum, except one case reported by Wallace in 1911, in which he made use of a single limb of the sigmoid. As the diameter of the ileum is abundant and as one side of a loop is as long as the loop itself, I have made use of this method in one case. The technic followed that of Baldwin in most respects, the difference being that I used a vertical incision through the vulva and a single leg of the ileum instead of the loop. The advantages of using one limb of the intestinal loop instead of both are: 1. It takes less of the bowel. 2. It requires the closure of only one end of the utilized limb instead of both ends of the loop. 3. A second operation to divide the septum between the legs of the loop is unnecessary. The operation is complete in one sitting.

The Conduct of Hospitals

DR. R. W. CORWIN, Pueblo, Colo.: I sent the following letter to a hundred prominent physicians, surgeons and superintendents associated with hospitals: "What would you suggest as the most important improvement that could be made in the hospital of today?" About fifty replies were received, and among the recommendations are:

The character of the staff should be improved. The number of paid men on the staff should be increased. Incompetent men should be excluded from operating. The doctors should be reeducated. Doctors should practice what they preach regarding cleanliness. There should be a professor of efficiency to teach doctors and nurses so they will not waste 50 per cent. of their time. There should be better cooperation between the members of the staff. All members should exercise initiative. The hospital will give to the sick what the doctor demands. A hospital will be just as good as the staff, and no better.

Laboratories should be in charge of more skilful and better paid men. The equipment should be better. There should be development of services in clinical pathology and oral instruction for interns. There should be chemical laboratories for making and testing chemical substances used for patients. A hospital without a scientific department is not a hospital, but merely a sanatorium. A laboratory that conducts

only urine and blood examinations might just as well be abolished. A roentgen-ray department that takes only bone pictures loses nine tenths of its opportunities. All real laboratories are open the whole twenty-four hours. Hospitals should do more teaching. The interns should receive more instruction from the staff and in laboratories. The use of hospitals should be limited to operators of known ability and standing. Economy should be observed in the operating room and elsewhere. Waste space should be eliminated, decreasing labor and expense. Economy should be practiced so that more of the middle class may take advantage of the hospital.

In general, there should be centralization of medical government. The board of managers should be reeducated. There should be a medical executive as superintendent, a trained pathologist and anesthetist, and social service work to prevent disease, disability and disorder. Full diagnosis should be posted in the operating room in advance of operations. Very much more importance should be given to sterilization. There is no method by which we are sure that a dressing has been sterilized. There should be more consideration of the patient; overworked doctors and nurses are unsympathetic; there is too much rush at clinics. Only the highest standard should be considered in dealing with life and death, health and disease, usefulness and uselessness.

First consideration should be given the patient. Let it be understood from the beginning that a hospital, whether private, semiprivate, general, special, emergency or war, is for the benefit of the patient and not for the convenience of the doctor, intern, medical student or nurse. Second consideration should be given to the site. No hospital, except an emergency hospital, should be located in a city, where it is dusty, dirty and noisy; a hospital should be located where there is plenty of room for grass, flowers and shade trees, and opportunity for outdoor life. If a hospital is of benefit to a medical school, let the school go to the hospital instead of the reverse, but consider patients first. Attention should be given to plans of hospital buildings. If a hospital be located to the best advantage, it has been found that buildings of one or two stories have advantages over those of many stories. Construction is less expensive and for service given, more economical to maintain. Lastly, there should be better team work, better laboratory work, better case work, and more scientific medical and surgical work; more authority should be given to the superintendent; there should be one head, and eternal vigilance should be observed.

Epithelioma Involving the Axilla

DR. T. F. RIGGS, Pierre, S. D.: A man, aged 55, in 1906 had a growth removed from the right side of his lower lip, and in 1914 had a growth removed from the helix ot his left ear. In the latter part of 1915 he was operated on for a hematoma of the left axilla following an injury to a lipoma in the postaxillary region of that side. The lipoma had been present about four years. Sometime after the operation an enlargement of the lower cervical lymphatics on the left side was noticed. Later removal of one of these involved glands showed the presence of typical squamous cell carcinoma. Carcinomatous involvement of the tissues of the left axilla developed gradually, and finally an interscapulothoracic amputation of the left shoulder was done. During this operation an unsuspected involvement of the lymphatics in the occipital portion of the posterior cervical triangle was found. During the dissection of the glands in this region, the patient began to show evidences of shock. He rallied quickly and seemed to be in fair condition, but died suddenly about two and one-half hours after the completion of the operation. Postmortem examination was negative throughout except for a chain of involved glands in the anterior mediastinum, healed foci of tuberculosis in both lungs, and a shower of fresh emboli in the right lung. The origin of the epithelioma of the left axilla was either a transverse metastasis from the growth in the right lower lip, a direct metastasis from the growth in the upper portion of the left ear, or an undiscovered focus in the hand, arm or axilla itself. The peculiar coincidence of frostbite as a cause of the growth in the lip and in the ear of this patient is of interest as a possible cause of the epithelioma.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

January, 1918, **77**, No. 1

1 Can the Frequency of Some Obstetric Operations Be Diminished? J. D. Voorhees, New York.—p. 1.
2 Ureterovesical Anastomosis. H. D. Furniss, New York.—p. 14.
3 *Influence of Pregnancy on Development, Progress and Recurrence of Cancer. W. S. Bainbridge, New York.—p. 21.
4 *Causes of Death in Childbirth; Maternal Mortalities in 100,000 Confinements at New York Lying-In Hospital. J. A. Harrar, New York.—p. 38.
5 Maternal and Infant Mortality in Midwifery Practice in Newark, N. J. J. Levy, Newark, N. J.—p. 41.
6 *Preeclamptic Cesarean Section. J. W. Poucher, Poughkeepsie, N. Y.—p. 54.
7 *Conservative Treatment of Eclampsia. R. McPherson, New York. —p. 58.
8 *Toxemias of Pregnancy and Their Treatment. A. B. Davis, New York.—p. 62.
9 *Indications for Interference in Preeclamptic Toxemia. W. G. Dice, Toledo.—p. 76.
10 Alcohol Drain in Septic Cases Requiring Cesarean Section. C. L. Ill, Newark, N. J.—p. 83.
11 *Treatment of Ectopic Gestation Based on Study of One Hundred Cases; Report of Twelve Cases of Repeated Ectopic Pregnancies. A. J. Rongy, New York.—p. 86.
12 End-Results of Treatment of Inoperable Uterine Cancer by Heat. J. F. Percy, Galesburg, Ill.—p. 93.
13 Retroperitoneal Hernia in Duodenojejunal Fossa; Report of Cases. H. Grad, New York.—p. 102.
14 Report on Two Successfully Operated Cases of Meningocele. W. A. Norton, Savannah, Ga.—p. 169.

3. Abstracted in THE JOURNAL, Oct. 27, 1917, p. 1466.

4. Causes of Death in Childbirth.—From 1890 until July, 1917, the Lying-In Hospital, N. Y., has cared for 115,439 women. In all 101,197 actual confinements at or near term have been conducted. In the outdoor service, in 69,081 actual confinements, 218 women died, 0.31 per cent. mortality. On the indoor service, of 23,130 regular applicants confined, 109 women died, 0.47 per cent. The predominating cause of death was puerperal infection. There were 23 deaths from puerperal infection among the 23,130 regular applicants confined indoor, and 59 deaths from puerperal infection among the 69,081 outdoor confinements; mortality of 0.95 per thousand, an 0.85 per thousand, respectively. Eclampsia accounted for 10 deaths among the indoor regular applicants, or 0.43 per thousand confinements and for 26 deaths on the outdoor service, or 0.37 per thousand confinements. The third most frequent cause of death was peritonitis after the performance of cesarean section. Thirteen deaths occurred among the indoor regular applicants and three among the outdoor cases referred into the hospital. Five died of placenta praevia among the indoor regular applicants, 0.26 per thousand, and 25 among the outdoor applicants, or 0.36 per thousand. Of ruptured uterus, there were 5 deaths indoor and 20 deaths outdoor, or 0.26 per thousand and 0.28 per thousand. Deaths from nephritis, broken cardiac compensation pneumonia, shock and exhaustion from prolonged labor, and postpartum hemorrhage rank next. Then come deaths from shock and hemorrhage after cesarean section, tuberculosis, acute toxemia of pregnancy without convulsions, and accidental hemorrhage, in the order named. The lesser causes, explaining from 1 to 3 deaths each, are abdominal pregnancy, rupture of the vaginal vault, pulmonary embolism and thrombosis, cerebral hemorrhage, appendicitis complicating late pregnancy, suicide in acute mania, carcinomatosis, brain tumor, sarcoma of the liver, and ether and chloroform narcosis. And, finally, about one tenth of 1 per cent. of the total number of deaths, occurred from unknown causes; the majority of these being put down on the reports as due to pulmonary embolism, but without necropsy for verification.

6. Abstracted in THE JOURNAL, Oct. 13, 1917, p. 1294.

7, 8 and 9. Abstracted in THE JOURNAL, Oct. 27, 1917, pp. 1466 and 1467.

11. **Treatment of Ectopic Gestation.**—The most striking feature of this series of cases is that twelve patients were operated on for repeated ectopic pregnancy; nearly 90 per cent. of the 100 cases were not diagnosticated until rupture had taken place and the patients began to show evidence of shock. In forty patients the diagnosis of incomplete abortion was made by the family physician, and these patients were subjected to curettage.

American Journal of Physiology, Baltimore

January, 1918, **45**, No. 2

15 *Effect of Organ Extracts on Contraction of Voluntary Muscle. J. Rogers, H. C. Coombs and J. M. Rahe, New York.—p. 97.
16 Epinephrin Vasodilator Mechanisms in Cat at Different Ages. F. A. Hartman and L. G. Kilborn, Toronto, Canada.—p. 111.
17 *Physiology of Stomach. Hunger, Appetite and Gastric Juice Secretion in Man During Prolonged Fasting (Fifteen Days). A. J. Carlson.—p. 120.
18 Aequiradio-Activity. H. Zwaardemaker, Utrecht, Netherlands. —p. 147.

15. **Effect of Organ Extracts on Voluntary Muscle.**—Intravenous injection of the noncoagulable portions of the alkaline saline extracts of the thyroid, parathyroid and suprarenal glands increase the vigor of contraction of fatigued voluntary muscle. The commercial 1:1,000 solution of epinephrin shows a similar stimulant effect. No other materials tested, derived from the thyroid, parathyroid and suprarenal glands show any stimulant effect on fatigued voluntary muscle. Materials from the other endocrine glands show no effect on voluntary muscle contraction. Desiccation of the thyroid appears to lessen or distroy its activity. Excision of the thyroid appears to have no immediate effect on the fatigability of voluntary muscle. "Residues" made from adenomatous or cyst adenomatous thyroid material, as well as those made from the supposedly overactive gland of hyperthyroidism, are inert.

17. **Physiology of Human Stomach in Prolonged Fasting.**—During the fifteen days' complete fast and the subsequent eight days of abstinence from food with daily ingestion of cotton fiber, the gastric hunger contractions of Carlson's subject continued with practically normal rhythm and intensity, but the subjective sensations induced by the gastric contractions appeared to be somewhat weakened and tinged with an element of general epigastric distress or sick stomach. The view that the hunger mechanism fails early in prolonged fasting is therefore not tenable as a general law. The appetite sense or desire for food was modified or obscured by a tendency to a persistent bad taste in the mouth that developed during the fast. But the patient said that the dominant element in consciousness during the fast was nevertheless thought of food and eating. The contents of the empty stomach and the continuous gastric juice secretion during the fasts show a tendency to a slight increase in acidity and greater frequency of regurgitation of duodenal contents into the stomach, but there is no significant increase in secretion rate over that of the control periods. In other words, the normal process of continuous gastric secretion of the empty stomach is not noticeably augmented in prolonged starvation.

Archives of Internal Medicine, Chicago

January, 1918, **21**, No. 1

19 *Value of Atropin Test in Diagnosis of Typhoid. E. H. Mason, Montreal, Que.—p. 1.
20 Factors in Resistance to Tuberculosis. W. F. Petersen, Chicago. —p. 14.
21 Lipodystrophia Progressiva; Report of Case. I. J. Spear, Baltimore.—p. 39.
22 Effect of Various Neutral Solutions on Gastric Discharge, Gastric Secretion and Duodenal Regurgitation. W. E. Morse, Chicago. —p. 48.
23 *Simple Technic for Demonstration of Phagocytic Mononuclear Cell in Peripheral Blood. F. A. McJunkin, Milwaukee.—p. 59.
24 *Calcification in Pineal Gland: Report of Case. E. P. Boas and T. Scholz, New York.—p. 66.
25 *Anatomic Observations Concerning Mechanism of Bile Resorption in Jaundice. H. Oertel, Montreal, Que.—p. 73.
26 *Studies on Metabolism in Gout. J. A. Wentworth and C. W. McClure, Boston.—p. 84.
27 *Effect of Diet on Blood Sugar in Diabetes Mellitus. H. O. Mosenthal, S. W. Clausen and A. Hiller, Baltimore.—p. 93.
28 *Stimulation of Respiration by Sodium Cyanid and Its Clinical Application. A. S. Loevenhart, W. F. Lorenz, H. G. Martin and J. Y. Malone, Madison, Wis.—p. 109.
29 *Influence of Large Doses of Thyroid Extract on Total Metabolism and Heart in Case of Heart-Block. J. C. Aub and N. S. Stern, Boston.—p. 130.
30 Extensive Calcification of Lungs as Distinct Disease. F. Harbitz, Christiania, Norway.—p. 139.
31 *Auricular Flutter. J. M. Blackford, Seattle, and F. A. Willius, Rochester, Minn.—p. 147.
32 *Heart-Block. F. N. Wilson and G. C. Robinson, St. Louis.—p. 166.
33 Rate of Absorption and Excretion of Iodids of Strontium, Sodium and Potassium. E. J. Krahulik, Omaha, and J. D. Pilcher, Cleveland.—p. 176.

19. **Atropin Test in Typhoid.**—Mason and his associates used atropin in the diagnosis of the enteric group of infections on 109 patients, 63 of them suffering from typhoid, or paratyphoid B infections, and 46 nontyphoid cases. The technic adopted is practically the same as that recommended by Marris, except that in most of the tests the author used one thirtieth in place of one thirty-third grain of atropin sulphate. Of the 63 cases of typhoid or paratyphoid B infections, 56 were cases of typhoid, the diagnosis being confirmed by blood culture, or by a Widal reaction in dilution above 1 in 40. Five of the remaining 7 cases were infections due to *B. paratyphosus* B, while the remaining 2 ran a typical typhoid course, but at no time was the author able to confirm his diagnosis by bacteriologic or by serologic methods. It seems that the reaction becomes positive at about the tenth and disappears at about the thirty-first days of disease. In the nontyphoid group 3 cases gave a positive reaction. In the diagnosis of fevers of the enteric group, Mason believes the test to be of great value, and in many cases undoubtedly precedes the Widal reaction. As a means of diagnosing the syndrome termed vagotonia the use of atropin in the above manner is suggested.

23. **Mononuclear Cells of Blood.**—In the method used by McJunkin the object is to bring the leukocytes into contact with fine particles of carbon at the body temperature and under exact and uniform conditions, and then to fix and stain them properly.

24. **Calcification of Pineal Gland.**—Boas and Scholz report a case occurring in a man, 74 years of age, in which the roentgenogram of the skull and later the necropsy revealed a definite calcification of the gland. The authors are of the opinion that in the vast majority of cases the calcification is only an exaggeration of the deposit of brain sand found normally in the pineal gland of adults. As would be expected, these shadows are found more frequently with advancing age. Since the calcification occurs in the course of the normal involution of the pineal gland, it has no significance except in very young individuals. In these it may be an evidence of an abnormally early involution of the pineal gland, which, if it occurs at the period when the gland is normally physiologically active, may cause symptoms due to insufficiency of the pineal secretion.

25. **Bile Resorption in Jaundice.**—From the study of a case Oertel says that bile resorption in hematogenous icterus may occur by intra-acinar lymph and blood resorption almost simultaneously.

26. **Metabolism in Gout.**—The results obtained by Wentworth and McClure in their study show that in chronic gout, in the absence of acute symptoms, and with patients on a purin-free or nuclein-rich diet, there is no profound change in the intermediary metabolism as compared with that of a nongouty person. These negative findings do not exclude the possibility that in gout there is (1) a disturbance in the metabolism of the nucleins, (2) or a disturbance in some other phase of the intermediary metabolism, (3) or a disturbance in some minor phase of intermediary metabolism produced by nuclein-rich foods. They only show that it is too slight, or of a nature not to produce any marked change in the basal metabolism. Therefore the basal metabolism and respiratory quotient of gouty persons fall within normal limits. Nuclein-rich foods produce no change in intermediary

metabolism of gouty persons detectable by the method of indirect calorimetry.

27. **Blood Sugar in Diabetes Mellitus.**—Mosenthal and his associates claim that the maximal percentage of blood sugar occurring in diabetic individuals on a carbohydrate-free diet, or one containing a moderate amount of starch, can be obtained by making the determinations one to two hours after breakfast. The glycemia may rise somewhat higher after lunch or supper, but never to any marked degree. On the other hand, the blood sugar may fall considerably in the afternoon and evening hours, leading to erroneous interpretations if taken at this time of day. In diabetic cases there is a tendency for the blood sugar to remain constant throughout the day while on a protein-fat diet, if the fasting blood sugar is high; on the other hand, if the fasting blood sugar is low, that is, if it has been reduced by previous dietetic treatment, there is an increase which may become very marked in the glycemia after carbohydrate-free food. This leads to the conclusion that cases of diabetes mellitus, in raising their fasting or basal blood sugar percentage, are trying to adjust their carbohydrate metabolism for the more advantageous utilization of glucose. It may be desirable, therefore, not to attempt to reduce the blood sugar to a normal value in cases of diabetes mellitus.

28. **Sodium Cyanid and Respiration.**—The authors treated ten patients with intravenous injections of fiftieth-normal sodium cyanid solution (0.1 per cent.). The treatment was repeated in some cases so that in all, fifteen treatments were given. In every case a marked stimulation of the respiration was obtained on the average within twenty seconds after starting the injection. The stimulation could be controlled accurately by the rate of injection. The duration of the stimulation following a single injection depends on the dose and rate of injection. In cases showing great depression of the respiration, when it is desired to produce a milder and more continuous form of stimulation of the respiration, it is desirable to give a slow, continuous injection of fiftieth-normal sodium cyanid intravenously at a rate varying from 1 c.c. in thirty seconds to 1 c.c. in fifteen seconds, depending on the degree of stimulation and the condition of the patient. The injection should either be slowed or temporarily stopped on the appearance of any of the following symptoms: (1) marked pallor; (2) signs of nausea; (3) marked increase in the pulse rate; (4) depression of the respiration following too rapid injection or too large a dose, and (5) any other evident ontoward symptom should be the signal for stopping the injection. The factor of safety in the intravenous administration of fiftieth-normal sodium cyanid is sufficiently large for clinical purposes. It is the authors' opinion that the intravenous injection of sodium cyanid may prove to be useful in the following conditions: (1) depression of the respiration resulting from increased intracranial pressure however produced, until the condition can be relieved by decompression; (2) resuscitation from drowning; (3) embarrassment of the respiration under any form of anesthesia, and (4) other forms of respiratory depression, when it may be given in addition to artificial respiration. Opportunity has not presented itself for us to study the effect of cyanid in all of these conditions.

29. **Thyroid Extract and Heart-Block.**—In this case thyroid extract was administered in increasing doses so that by the end of a period of from three to four months over 2,000 grains had been ingested. For the last four weeks of this period the dose amounted to 28 grains a day. The only effects observed from taking these large amounts of thyroid were an increase in the basal metabolism of 47 per cent. above normal and a rapid auricular rate of 120. After the withdrawal of the thyroid the basal metabolism fell to normal limits within twelve days and the auricular rate within nineteen days (perhaps less). During the first months after the thyroid was omitted the body weight increased over 8 pounds. The thyroid administration had no apparent effect on the respiratory quotient or the blood sugar. The auricular rate was influenced by thyroid extract, but not the ventricular, which suggests that thyroid does not increase the heart beat by direct action on the muscle, but through nervous channels.

31. **Auricular Flutter.**—Auricular flutter occurs as a mechanical disorder in certain diseased hearts, and in the experience of Blackford and Willius has been most frequently associated with exophthalmic goiter. The paroxysmal attacks noted in fourteen of their sixteen cases are dangerous to health and even to life. Two patients died in such attacks and two others appeared so nearly dead as to deceive competent observers. The patient with flutter is always in danger of such attacks. He should always have the disorder arrested as soon as possible after its discovery. In the authors' experience efficient treatment may be relied on to cause the onset of fibrillation and greatly to relieve the patient. None of their patients is known to have had a recurrence of flutter after his dismissal. Three patients were operated on under ether anesthesia for exophthalmic goiter after fibrillation was established, and one of these and one other have had tonsillectomies (local anesthesia) performed without incident. Cholecystectomy has been performed in one case. All of the ten treated patients are alive and much improved or cured with treatment. Five report that they cannot detect any cardiac symptoms.

32. **Heart-Block.**—Two cases of complete heart-block showing unusual features are reported by Wilson and Robinson. The following phenomena were observed: Auricular arrhythmia dependent on ventricular activity. Ectopic auricular beats dependent on stimuli received from the contracting ventricles. Increase in the idioventricular rate after the administration of atropin. Multiple ventricular extrasystoles after exertion. Spontaneous changes in the form of the auricular and of the ventricular complexes. The explanation of these phenomena is discussed.

Archives of Pediatrics, New York

December, 1917, **34**, No. 12

34 *Skin and Throat Manifestations of Acute Anterior Poliomyelitis. J. G. Regan, Brooklyn.—p. 884.
35 Case of Pluriglandular Disturbance; Organotherapy; Cure. W. Timme, New York.—p. 901.
36 Strophulus. D. W. Montgomery, San Francisco.—p. 910.
37 Care and Management of Cardiopathic Child. W. L. Rost, New York.—p. 915.
38 Case of Congenital Paramedian Sinuses of Lower Lip. N. Toomey. —p. 924.
39 Case of Infantile Syphilis of Liver. E. L. Bauer, Philadelphia. —p. 927.
40 Case of Chylothorax. G. R. Pisek, New York.—p. 929.
41 *Measles Problem. C. Herrman, New York.—p. 933.
42 Need of Standardizing Statistics of Child Caring Institutions, Foundling Asylums, etc. S. W. Wynne, New York.—p. 939.

34. **Skin and Throat Manifestations of Poliomyelitis.**—Regan claims that congestion of the throat is an almost constant symptom of poliomyelitis during the early acute stage of the malady. It is as a rule limited to the faucial mucosa, and the pharynx, while the soft palate assumes a deep red color, and often in addition a distinct violaceous tinge, but the surface blood vessels of its mucosa are not usually congested to any very noticeable extent. This violaceous tinge which the soft palate assumes varies in degree, and while not by any means typical, it is somewhat distinctive of poliomyelitis, when it is marked. The capillary congestion of the mucous membrane of the throat in scarlatina is more intense than it is in acute anterior poliomyelitis and involves a much more extensive area. In addition to this there is a punctiform rash on the soft palate and the throat is a bright red color. A mild degree of inflammation of the tonsils is very common; but follicular exudation is very rare, and true membrane formation was never encountered. The buccal mucosa varies only slightly in color during the acute stage, and the blood vessels are only occasionally markedly congested as in measles and scarlet fever. Rarely a macular rash is seen on its surface and in such cases Koplik's spots may be closely simulated. The tongue is usually heavily covered with a grayish or yellowish white coating, the edges and the tip being devoid of covering. Frequently the coating is geographical in its outline. The papillae are not found to be especially prominent or enlarged. Gingivitis occurred in a small proportion of the patients. The epithelial debris covering the gums was only rarely as marked as that often seen in

measles. Rashes occurred in approximately 10 per cent. of the cases. Eruptions were most frequent in the younger children. They may appear as early as the second day or as late as the fifth or sixth week. Their average duration is about four days. In distribution, the rashes showed a decided tendency to localize on the trunk, being more prominent on the neck and face. The type most commonly encountered was the pin-point to pin-head papular variety. Herpes labialis are very rare in poliomyelitis, an important point in differential diagnosis from cerebrospinal meningitis. Herpetic-like lesions are not uncommon. Desquamation is rather frequent in poliomyelitis. It is usually furfuraceous.

41. **Measles Problem.**—After years of observation of the spread of measles, Herrman has become convinced that a real control, and a distinct reduction in morbidity and mortality is impossible with the present prophylactic measures. A true control can only be obtained by the immunization of infants against the disease. He urges that the child with measles should not be sent to the hospital, but should be treated at home. In a series of 408 consecutive cases which Herrman treated in their homes, the majority in tenements, without a trained nurse, one half under 3 years of age, the mortality was only 1.5 per cent. The chief disadvantages of hospital treatment are the danger of cross infection and the lack of individual care.

Bulletin of Johns Hopkins Hospital, Baltimore

January, 1918, **29**, No. 323

43 *Ureteral Stricture; Report of One Hundred Cases. G. L. Hunner, Baltimore.—p. 1.
44 Chief Function of Oblique Muscles of Eye. S. Theobald, Baltimore.—p. 15.
45 *Observations on Hemoglobin After Operation. G. R. Dunn and H. M. N. Wynne, Baltimore.—p. 17.

43. **Ureteral Stricture.**—Hunner says that the taking of pyeloureterograms is not necessary in making a diagnosis of ureter stone except in the few cases in which one cannot go by an obstruction in the ureter. Under such conditions if one can pass a catheter with a whistle tip to the point of obstruction, the contrast solution often can be forced beyond the obstruction and intensify a stone, if it be present, or outline the character of the obstruction and the condition of the tract above. Although the roentgen ray is not necessary in making a diagnosis in most cases of ureteral stricture Hunner uses it in most cases for the satisfaction of its confirmatory value. For work on the male subject with the unavoidable restriction in the use of instruments the pyelogram is one of the best aids in diagnosis of ureteral stricture. The ureterogram is of great value in deciding whether a small shadow on the roentgenogram is within the ureter or whether a phlebolith. Some of the diagnoses made on these patients although their symptoms were chiefly due to ureteral stricture were: Urinary tract: cystitis, pyelitis, pyelitis of pregnancy and the puerperium, pyonephrosis, floating kidney, hydronephrosis, stone in the ureter, chronic Bright's disease. Genital tract: pelvic inflammatory disease, ovarian disease. Gastro-intestinal tract: various functional disorders of the stomach and intestines, chronic peritonitis, intestinal adhesions, sigmoid adhesions, colitis, chronic pancreatitis, gallstones, appendicitis. Joint and nerve conditions: lumbosacral and iliosacral joint pains, neuralgia of the sacral plexus, sciatica. Mental disorders.

45. **Hemoglobin after Operation.**—In the series of cases here reported, Dunn and Wynne endeavored to show the effect on the hemoglobin of operations during which there has been slight, moderate or severe hemorrhage. The Sahli hemiglobinometer was used. A uniform technic was observed throughout, and in almost all cases one instrument was used for all the readings on a given case. The hemoglobin readings shortly after operation show very little change when compared with readings made before operation, even in cases of severe hemorrhage. The immediate postoperative reading often shows some increase over the preoperative reading. The lowest point of the hemoglobin curve is found usually from thirty to sixty hours after operation (a difference of less than 5 per cent. is not considered). The greatest drop in hemoglobin is usually during the first twenty-four to thirty-six hours, and is most rapid when salt solution infusions have been given. In the series showing only a slight loss of blood at operation, the hemoglobin readings are usually higher during the first twelve hours than those made before operation, and there is very little postoperative decrease at any time.

California State Journal of Medicine, San Francisco

January, 1918, **16**, No. 1

46 Status of Health Insurance in California. R. Bine, San Francisco.—p. 4.
47 Venereal Situation among Forces at War. J. C. Spencer, San Francisco.—p. 5.
48 *Appendicitis in Childhood; Study of One Hundred Cases. L. Porter, San Francisco.—p. 10.
49 Rat Bite Fever; Report of Two Cases. F. F. Gundrum, Sacramento.—p. 16.
50 Conservative Physician's View of Proposed Social Health Insurance Schemes. S. E. Simmons, Sacramento.—p. 18.
51 Exfoliative Cystitis. G. MacGowan, Los Angeles.—p. 21.
52 Internal Hemorrhoid Operation and After Care Under Quinin Urea Hydrochlorid Anesthesia. E. J. Clemons, Los Angeles.—p. 23.
53 Laryngeal Affections. H. B. Graham, San Francisco.—p. 25.
54 Case of Otitic Meningitis. E. C. Sewall, San Francisco.—p. 28.
55 Acute Mastoiditis with Generalized Miliary Tuberculosis. C. F. Welty, San Francisco.—p. 31.
56 Colloidal Mastic Reaction of Cerebrospinal Fluid. E. A. Victors, San Francisco.—p. 32.
57 Care of Functioning Breast. F. C. Ainley, Los Angeles.—p. 36.
58 *Gastro-Enterostomy. C. W. Lippman, San Francisco.—p. 38.
59 Mineral Springs and Some of Their Internal Uses. R. H. Hunt, Bartlett Springs.—p. 39.
60 Case of Charcot Joint of Spine. W. H. Campbell, Santa Barbara.—p. 41.
61 Foreign Body Lodged in Lung and Removed After Eleven Years by Bronchoscopy. P. R. Walters, Dinuba.—p. 42.
62 Spinal Cord Changes in Combined Sclerosis. W. F. Schaller, San Francisco.—p. 44.

48. **Appendicitis in Childhood.**—A rapid progress to gangrene and perforation is much more common before the fifth year than later in life as evidence by the fact that 73 per cent. of Porter's patients of 5 years or under perforated in contrast to 28 per cent. in children between 10 and 15. The gravest danger to these little patients lies in the fact that parents are allowed to think stomachache a normal event in children's lives and to believe that purgation is a panacea. If they could be taught that every acute abdominal pain is a potential appendicitis and that purgation may be deadly, Porter says, many children would be saved who now are doomed to die.

58. **Gastro-Enterostomy.**—Among the bad results of gastroenterostomy in the 100 cases analyzed by Lippman were: Recurrent ulcers operated on—one gastrojejunal and two recurrent in the stomach proper; six patients reoperated on for adhesions, five more in which the recurrent symptoms of gas and acute discomfort after meals were ascribed to adhesions, and three patients in which the stoma remained too large or too relaxed. These latter patients suffered from gas and distention immediately after eating. One of these patients also had diarrhea with undigested food appearing in the stools. A finely divided diet relieved him. Twelve patients were not completely relieved of their symptoms, being unable to take full diet without hyperacidity, pyrosis and gas after eating. This makes 29 cases with poor after-results, 8 fatal cases, 12 cases which could not be followed in this series, leaving 51 cases with good results. Among the good results are 12 cases of pylorostenosis which, separated out, only gives 39 cases of simple peptic ulcer with good results against 37 cases with poor results. Of the fatal cases, one patient died of hemorrhage within twelve hours of operation, two of postoperative shock, one of peritonitis and four of pneumonia. Four of the patients were practically moribund at operation.

Colorado Medicine, Denver

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63 Forecasting of Community Diseases. H. Sewall, Denver.—p. 6.
64 Imagination and Medicine. J. Inglis, Denver.—p. 9.
65 Autogenous Vaccine in Treatment of Pulmonary Tuberculosis. O. D. Wescott, Denver.—p. 13.

Florida Medical Association Journal, Jacksonville

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66 War Work of American Medical Women. E. M. Mosher.—p. 159.
67 Progressive Ethics. J. H. Coffee, Fort Meade.—p. 161.
68 Prevention of Intestinal Diseases, Including Typhoid. M. L. Crum, Bowling Green.—p. 164.
69 Relation of Eye, Ear, Nose and Throat to Conservation of Health of Schoolchildren. S. F. Smith, Lakeland.—p. 167.
70 How Much Do We Owe Our Patients? L. L. Andrews, Fort Myers.—p. 169.
71 Eliminative Treatment of Eclampsia. L. E. Parmley, Winter Haven.—p. 172.
72 Value of Nurse Hired by City or District, Community Nurses. B. Honeywell, Lakeland.—p. 174.
73 Sanitary Inspector in Prevention of Diseases. H. O. Snow, Tampa.—p. 176.
74 New Obstetric Sheet. G. H. Edwards, Orlando.—p. 177.

Kansas Medical Society Journal, Topeka

January, 1918, **18**, No. 1

75 Sporotrichosis; Report of Case. R. C. Henderson, Erie.—p. 1.
76 Educational Function of Hospital. M. Conklin, Topeka.—p. 4.
77 Acute Infectious Poliomyelitis. J. A. Rader, Caney.—p. 8.
78 Obstetric System. N. C. Speer, Osawatomie.—p. 9.
79 Some Uses of Eserin. C. L. Smith, Independence.—p. 11.

Kentucky Medical Journal, Bowling Green

January, 1918, **16**, No. 1

80 Provision for Feebleminded of Kentucky. A. Dixon, Henderson. —p. 33.

Medical Record, New York

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81 Tuberculosis in French Army During War. C. U. Dercle.—p. 1.
82 Tuberculosis and War. G. E. Bushnell, Washington, D. C.—p. 4.
83 Psychopathology. E. S. Cowles, New York.—p. 6.
84 Restoration of Motor Function in Resected Nerve Treated by End-to-End Anastomosis. J. Byrne, A. S. Taylor and S. W. Boorstein, New York.—p. 11.
85 Dermatoses of Scalp. M. Scholtz, Cincinnati.—p. 15.
86 Status Lymphaticus; Death Following Tonsillectomy; Necropsy. W. W. Carter, New York.—p. 19.

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87 Acute Abdomen. J. B. Deaver, Philadelphia.—p. 47.
88 Studies of Borderline Cases Among Criminals. L. E. Duval, Washington, D. C.—p. 52.
89 Surgical Treatment of Cancer. H. J. Boldt, New York.—p. 62.
90 Diagnostic Significance of Bleeding from Rectum. A. A. Landsman, New York.—p. 63.
91 Gonorrhea as Constitutional Disease. B. P. Thom, New York. —p. 66.

Michigan State Medical Society Journal, Grand Rapids

January, 1918, **17**, No. 1

92 Treatment of Erysipelas. F. B. Tibbals, Detroit.—p. 1.
93 Causes of Abortion. J. E. Davis, Detroit.—p. 2.
94 Carrell-Dakin Treatment of Infected Wounds. A. Campbell, Grand Rapids.—p. 5.
95 Case of Condyloma Lata and Condyloma Acuminata in Patient with Syphilis and Gonorrhea. J. A. Elliott, Ann Arbor.—p. 9.
96 Clinical Application of Electrocardiography. G. E. Fahr, Ann Arbor.—p. 10.
97 Leukemia Cutis with Demonstration of Case. J. A. Elliott, Ann Arbor.—p. 19.
98 Case of Hydrophobia. H. deB. Barss, Ann Arbor.—p. 21.
99 Case of Typhoid Receiving Intravenous Injection of Foreign Protein. J. B. Grant, Ann Arbor.—p. 25.
100 Review of Month's Roentgenograms. J. G. Van Zwaluwenburg, Ann Arbor.—p. 28.

Missouri State Medical Association Journal, St. Louis

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101 Control and Treatment of Criminal Abortion. R. M. Spivy, St. Louis.—p. 1.
102 Carcinoma of Larynx; Report of Cases. R. H. Meade, Kansas City.—p. 5.
103 Protein Indigestion in Infants. J. Zahorsky, St. Louis.—p. 8.
104 Health Conditions in Missouri Penitentiary. W. A. Clark, Jefferson City.—p. 10.
105 *Stricture of Esophagus. Successfully Dilated from Below Upward Through Gastrotomy Opening. E. F. Robinson, Kansas City. —p. 14.
106 Mental Hygiene as Factor in Public Health. F. M. Barnes, Jr., St. Louis.—p. 15.
107 Chewing Gum and Catheter as Foreign Bodies in Bladder. C. Martin, St. Louis.—p. 17.

105. **Stricture of Esophagus.**—For twenty years no solid food entered the stomach of Robinson's patient and liquids only in the smallest quantities. Since birth this girl had never been able to swallow solid food. Ever since she could remember when she would eat the meal would be vomited about four to six hours later. For the past few months even milk would be ejected from the esophageal pouch, usually in a hard curd. A roentgenogram and the fluoroscope, after a glass of bismuth and buttermilk, showed a large esophageal pouch about 2 inches above the diaphragm. A faint, fine shadow about the size of a small knitting needle could be traced indistinctly through a stricture into the stomach. An effort was made to pass the stricture by having her swallow fine silk threads. In order to get these down they were attached to small pieces of easily dissolved chocolate cream candy, but no success resulted from these efforts. Under ether anesthesia the abdomen was opened by a vertical incision about 1 inch to the left of the median line. The stomach, which was very small, was brought into the wound and an incision just large enough to admit the index finger was made low down on the anterior surface. After locating the esophageal orifice a small bougie was passed with difficulty through it up into the pouch and out through the mouth. To the bougie was attached a heavy linen thread which was drawn out of the gastrotomy opening. A heavier silk thread was tied to this and then a double piece of obstetric tape. There was thus established two heavy ligatures through the gastrotomy opening, through the stricture, and out the mouth. The end of one of these were tied together to serve as a safety ligature. To the other was attached a rubber drainage tube which was pulled through the stricture and the end allowed to protrude from the stomach opening. Several holes were cut in the tube to permit feeding through it. The stomach was attached to the abdominal wound and the tube was invaginated to prevent leakage from the stomach. The patient was fed through the tube for the first three days, and when the tube was removed, liquids and soft food were given by the mouth. The gastrotomy closed in ten days. The emergency or safety ligature was not removed until the tenth day when bougies were passed by the mouth. These were continued each week for sometime. Three months after operation the girl had gained 30 pounds in weight.

New Jersey Medical Society Journal, Orange

January, 1918, **15**, No. 1

108 Uterine Myomas; Abdominal Hysterectomy Complete and Incomplete. J. S. Stage, Newark.—p. 1.
109 *Acute Endocarditis. H. I. Goldstein, Camden.—p. 3.
110 Removal of Tuberculous Persons. C. V. Craster, Newark.—p. 7.
111 Tenement House Supervision in Tuberculosis Campaign. M. W. Beemer.—p. 8.

109. **Acute Endocarditis.**—Two of the cases of endocarditis cited by Goldstein occurred in two young girls, sisters, and the only two children in the family. Both girls had attacks of tonsillitis, chorea, rheumatism and resulting cardiac trouble as a sequel—both patients had two attacks of acute endocardial inflammation, followed by cardiac decompensation, with kidney breakdown. Both girls had not begun to menstruate, although 14½ years of age. The attacks in both cases came on when they reached the same age. The older girl died several years ago, and the younger one has just gone through a severe second attack of acute endocarditis and is now suffering from a marked enlargement of the heart, cardiac decompensation and parenchymatous nephritis with general anasarca.

New Orleans Medical and Surgical Journal

January, 1918, **70**, No. 7

112 Fracture of Inferior Maxilla. A. G. Friedrichs, New Orleans. —p. 562.
113 Manufacture of Serums. M. F. Wilson, New Orleans.—p. 563.
114 Alimentary Glycosuria. A. Eustis, New Orleans.—p. 566.
115 Selection of Donors by Grouping for Blood Transfusion. E. Bass, New Orleans.—p. 573.
116 Operative Interference in Pott's Disease. P. A. McIlhenny, New Orleans.—p. 579.
117 Several Cases of Hypophyseal Disease. H. N. Blum, New Orleans. —p. 583.
118 Device for Localization of Foreign Bodies by Means of Roentgen Rays. A. Granger, New Orleans.—p. 585.
119 Case of Bullet in Ilium. E. L. Leckert, New Orleans.—p. 590.
120 Exemption Boards and Medical Men in Making and Keeping up an Army. L. Sexton, New Orleans.—p. 592.

New York Medical Journal

Jan. 12, 1918, **107**, No. 2

121 *Instruction and Supervision of Expectant Mothers in New York City. J. Sobel, New York.—p. 49. To be concluded.
122 Wassermann Complement Fixation Test for Syphilis. J. W. Smith, Jr., New York.—p. 55.
123 Operative Methods for Cure of Hemorrhoids. A. A. Landsman, New York.—p. 59.
124 Mastoiditis. G. E. Steel, New York.—p. 63.
125 Rôle of Minor Surgical Procedures in Development of Thrombo-Angeitis Obliterans. I. Gottlieb, New York.—p. 65.
126 Chloroform Poisoning. C. E. Hyde, Bridgeport, Conn.—p. 67.
127 Disposal of Sewage. H. Greenstein, New York.—p. 67.
128 Trench Diseases. J. E. Lind, Washington, D. C.—p. 73. To be continued.

121. **Supervision of Expectant Mothers.**—The instruction and supervision of expectant mothers New York City centers around the baby health stations of the department of health, of which there are fifty-nine in the Greater city. Each of the eight "prenatal" nurses has her office at one of these stations, and draws her clientele from the district boundaries of this station. Nurses with special aptitude for this work are selected whenever possible. The nurse holds office hours at the station every morning from 9 to 10 o'clock in order to interview and advise mothers, and to be on call for any special emergencies which may arise. With the consent and understanding of the physician or institution in charge, nurses instruct mothers antepartum as regards general home conditions, diet, clothing, exercise, rest, ventilation, bathing, care of the teeth and breasts, general physical and mental condition, arrangements for confinement, placing special emphasis on the advisability and desirability of maternal nursing, and postpartum, as to the importance of maternal nursing, care of the eyes, sleep, regular feeding, milk modification, etc., urging the mother to follow carefully the physician's directions.

With the consent of the physician or of the institution in charge of the patient, or at their request, examinations of the urine, to detect the presence of albumin, are made at least once a month up to the sixth month of pregnancy, and thereafter every ten days or more frequently. If, before the birth of the child, there are any significant signs or symptoms which indicate danger, such as severe and persistent vomiting, pronounced and constant headache, swelling of the legs, scanty urine, muscular twitching, convulsions, bleeding, etc., the nurse communicates immediately with the physician or institution in charge of the case or with the nearest maternity hospital, general hospital, dispensary, or ambulance service, and arranges for proper disposition of the case. If the nurse suspects the existence of syphilis, tuberculosis, or gonorrhea, she refers the patient to the private physician in charge or to the nearest hospital or dispensary.

Whenever indicated, these nurses accompany expectant mothers to hospitals, dispensaries, maternity, clinics, etc., for examination, treatment, or advice. Special emphasis is placed on securing the goodwill and cooperation of physicians, institutions and midwives in attendance and in communicating with them in all matters bearing on the cases. Mothers are always urged, as before noted, to place themselves under medical care, but if they express preference for a midwife, they are referred to midwives who are known to be graduates of the recognized school in this city, the Bellevue Hospital School for Midwives. The orders of the physician or midwife attending the patient are not interfered with in any way. As a check on unlicensed midwives, the nurse is expected to secure the name, address and floor of the midwife in each case of confinement coming to her attention, and report the same to the central office of the department. The Division of Midwives and Foundlings of the Bureau of Child Hygiene receives from each midwife a quarterly list of the mothers delivered by her. In an effort to secure an increased enrolment of expectant mothers, the midwives of the city have been requested by the special corps of nurses assigned to their supervision and by circular letters signed by the commissioner of health, to submit the names and addresses of the prospective mothers under their care in order that the latter may be given the necessary prenatal instruction and advice.

Ohio State Medical Journal, Columbus

January, 1918, **14**, No. 1

129 Physician in War; His Utilization and Conservation. D. S. Gardner, Massillon.—p. 6.
130 Urinary Calculi. E. O. Smith, Cincinnati.—p. 10.
131 Terminal Disinfection. R. G. Perkins, Cleveland.—p. 15.
132 Application of Carrel-Dakin Method to Treatment of Wounds in Civil Practice. P. J. Reel, Columbus.—p. 17.

Oklahoma State Medical Association Journal, Muskogee

January, 1918, **11**, No. 1

133 Gonorrhea in Female. L. M. Sackett, Oklahoma City.—p. 1.
134 Chronic Vesiculitis. W. J. Wallace, Oklahoma City.—p. 5.
135 Relation of Focal Infection to Skin Diseases. E. S. Lain, Oklahoma City.—p. 10.
136 Diagnosis of Gastro-Intestinal Lesions by Roentgen Ray. J. T. Martin, Oklahoma City.—p. 16.
137 Some Causes of Difficult Labor and Their Treatment. W. W. Wells, Oklahoma City.—p. 19.
138 Use of Obstetric Forceps. O. C. Newman, Shattuck.—p. 21.
139 Roentgenologic Diagnosis of Tuberculosis. W. E. Wright, Tulsa.—p. 23.
140 Carrel-Dakin Treatment at New York Polyclinic Hospital. A. R. Wiley, Tulsa.—p. 25.

Philippine Journal of Science, Manila

November, 1917, **12**, Sec. B, No. 6

141 Mohammedan Medical Practice in Cotabato Province. L. Gomez.—p. 261.
142 Disease in Cattle in Philippine Islands Similar to That Caused by Anaplasma Marginale Theiler. W. H. Boynton, Manila.—p. 281.

Rhode Island Medical Journal, Providence

January, 1918, **2**, No. 1

143 Some Factors in Diagnosis of Cardiac Conditions. W. H. Smith, Boston.—p. 1.
144 Measles. D. L. Richardson, Providence.—p. 4.
145 Lead Poisoning, Cause of Obscure Disease. W. L. Chapman, Providence.—p. 8.
146 Crisis of Pneumonia with Long Drop in Temperature. C. E. Hawkes, Providence.—p. 11.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bulletin of Naval Medical Association, Tokyo

August, 1917, No. 16

1 The Sand Tick, "Karasosu," on Island Parao in Caroline Archipelago. Y. Kato.—p. 1.
2 Case of Suppurative Cerebrospinal Meningitis Due to Streptococcus Mucosus. M. Takeda and M. Maruta.—p. 2.
3 *Clinical Test of Action of Antitrypsin and Its Diagnostic Value as Applied to Cancer. S. Kurata.—p. 3.
4 Antigenic Action of Paratyphoid B. Bacillus. M. Maruta.—p. 4.
5 Case of Actinomycosis of Ileum. K. Kuroiwa.—p. 6.

November, No. 17

6 *Experimental Report on Hemolysis in Paroxysmal Hemoglobinuria. K. Kurata.—p. 1.

3. **Action of Antitrypsin: Its Diagnostic Value as Applied to Cancer.**—Kurata examined (by the Roger and Sovignac methods) the action of antitrypsin on thirty-two patients whose cases were either diagnosed clinically as cancer cases, or proved to be so at the necropsy. Sixty-three per cent. proved positive. The activity of antitrypsin was greatly influenced by the position of the cancer, and by the degree of cachexia. When the cancer developed in an alimentary organ such as the stomach, or the liver, the increased activity of antitrypsin in the serum was remarkable; while in the case of cancer of the uterus or penis, the increased activity was comparatively small. In the case of noncancerous diseases, the activity of antitrypsin in the serum was either normal, or only a little increased, except in cases of pregnancy, puerperal women, chronic suppuration, and pulmonary tuberculosis, in which increased activity of antitrypsin in the serum is a recognized fact. In beriberi the activity increased only in atrophic cases. Therefore, the fact of increased activity of antitrypsin in the blood is of use only in cases of cancer, after other diseases which accompany the increased activity have been eliminated. A remarkable increase of its activity, when there is no other cause for it, may be taken as a clear indication of the existence of cancer in the alimentary system.

6. **Hemolysis in Paroxymal Hemoglobinuria.**—Kurata examined the hemolytic phenomena in the test tubes containing the blood of two patients suffering from paroxysmal hemoglobinuria, and reached the following conclusions concerning the nature of hemolytic amboceptor. (*a*) Hemolytic amboceptor present in the patient's blood serum combine easily with corpuscles, under the influence of cold. When they are once combined they do not separate, even if heat is applied. (*b*) When hemolytic amboceptors present in the blood serum are cooled by ice, or heated to 60 C. for half an hour, they lose their hemolytic nature. But when hemolytic amboceptors are combined with corpuscles they do not lose their hemolytic nature, even when cooled with ice, and it seems as if their hemolytic nature is protected by the corpuscles. (*c*) In so far as hemolytic amboceptors coming between complement and corpuscles cause hemolysis, they closely resemble Ehrlich's amboceptor. But as they do not combine with corpuscles unless cooled, and also lose their nature by the influence of cold and heat, they appear to be a different substance from Ehrlich's amboceptor. (*d*) Beside the hemolytic substance mentioned, Kurata also finds hemoglutinin in the blood serum of the patient which is not influenced either by cold or heat.

Medical Journal of Australia, Sydney

Dec. 8, 1917, **2,** No. 23

7 Ringworm and Allied Parasitic Skin Diseases in Australia. H. Priestley.—p. 471.

Dec. 15, No. 24

8 Menace of Birth-Rate. R. J. A. Berry.—p. 491.
9 *Ringworm Epidemic Presenting New Type of Fungus. C. N. Paul.—p. 496.

9. **Ringworm Epidemic Presenting Fungus.**—Recently there passed over certain districts of New South Wales a plague of mice, which advanced with the rapidity of an invading army, leaving in their train signs of great destruction and devastation. Their food supplies were drawn from huge stacks of wheat, accumulated owing to the lack of freight. As a result much of the wheat had to be rebagged and shifted, and many of those handling it became infected with a cutaneous eruption which was diagnosed as ringworm . There was ample evidence that the mice were the causative agent in this spread, for many were seen with patches almost denuded of hair. The eruptions occurred mostly on exposed parts, and on the hairy region of the face numerous and extensive areas of pustulation, the so-called multiple kerion, presented themselves. Pruritus was complained of, being more noticeable at night. A striking feature of the early patches was a rounded, and sharply circumscribed border, in which were scattered on an erythematous base, discrete vesicles, vesicopustules, and pustules, but in these desquamation was absent. The more advanced patches showed another phase in which there was a somewhat striking resemblance to chronic eczema. In these, the periphery was not sharply circumscribed as in the earlier lesions, the vesicles and pustules had disappeared, and outlying papules or papulovesicles were to be observed, as in chronic eczema. After soaking the scales in liquor potassae the fungus was revealed in abundance. Cultures were obtained from the hairs and scales with an unusual facility, and were remarkably constant in appearance. It was one of the microid ecto-endothrix trichophytons of the *Gypseum* group. Paul has called it the *Trichophyton rodens.*

Sei-I-Kwai Medical Journal, Tokyo

December, 1917, **36,** No. 12

10 *Experimental Study of Ginseng. W. Sakai.—p. 113.
11 *Repeated Vomiting as Cause of Hemorrhagic Erosion of Stomach (Stigmata Ventriculi, Beneke). M. Murata and H. Hashimoto. —p. 115.
12 Determination of Glycogen. I. Yamakawa.—p. 116.

10. **Experimental Study of Ginseng.**—From Sakai's examination it is evident that ginseng has not only a sedative action on the cerebrum, but also a stimulating action on few functions necessary to life; however, its action is not so great as was believed formerly. It may be useful as a tonic or stimulant.

11. **Repeated Vomiting as Cause of Hemorrhagic Erosion of Stomach.**—Of twenty-seven cases of the hemorrhagic erosion of the stomach examined postmortem, eighteen patients had repeated vomiting. In the remaining nine patients the existence of repeated vomiting was uncertain but in at least half of them it was probably present, as they were cases of suppurative peritonitis, contracted kidney and gastric cancer. From these experimental and anatomicoclinical examinations it is safe to say that hemorrhagic erosion can be caused by repeated vomiting.

Bulletin de l'Académie de Médecine, Paris

Nov. 27, 1917, **78,** No. 46

13 *Clinical Evaluation of Toxicity of the Urine. Billard and Perrin. —p. 620.
14 Action of Tin on Fever in Tuberculosis. A. Compton.—p. 622.
15 *Rubber in Hot Film Dressings. Mme. Bouet-Henry.—p. 627.
16 *Serum Treatment of Hemorrhage. H. Dufour and Le Hello. —p. 629.

Dec. 11, 1917, **78,** No. 48

17 *List of Prizes Awarded and Offered by the Académie.

13. **Superficial Tension as Index of Toxicity of the Urine.**—Billard and Perrin report that the superficial tension of urine is a simple and rapidly obtained index of its toxicity. In studying the toxic substances in the urine it was found that they always lowered the superficial tension of fluids in which they were in solution. The amount of toxic substance in urine that will kill a rabbit is as much smaller as the superficial tension is below normal.

15. See Paris Letter, page 112.

16. **Utilization of Passive Anaphylaxis in Serum Treatment of Hemorrhage.**—Dufour has been calling attention for some time to the importance of the changes induced by anaphylaxis as a means to influence hemorrhage from inadequate coagulation. He induced active anaphylaxis in a girl of 14 to arrest hemorrhagic purpura. Later he used serum from rabbits with passive anaphylaxis to arrest hemorrhages in two typhoid cases. He here reiterates that instead of using ordinary serum to arrest hemorrhages, serum from rabbits in which anaphylaxis had been induced by Besredka's method has a far more effectual action in hastening coagulation. A number of parallel tests are reported. The blood from twenty-three men and women showed hypercoagulability in nineteen specimens, three hours after injection of 5 c.c. of the anaphylactic rabbit serum (passive anaphylaxis).

17. See News Columns, page 183.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 26, 1917, **41,** No. 29

18 *The Arterial Pressure in Children Paralyzed from Poliomyelitis. A. Souques.—p. 1055.
19 *Treatment of Tuberculous Meningitis by Intraspinal Injection of Air. F. Ramond and François.—p. 1058.
20 *High Blood Pressure in Soldiers with Heart Disease. P. Merklen. —p. 1661.
21 Traumatic Pulmonary Tuberculosis. L. Giroux and Fabre.— p. 1066.
22 *Treatment of Syphilis. L. Bory.—p. 1068.
23 The Orthoamidobenzoate of Mercury. L. Bory and A. Jacquot. —p. 1071.
24 The Fifth Cusp and Inherited Syphilis. C. Mantoux.—p. 1073.

18. **Blood Pressure in Paralyzed Children.**—Souques found the arterial pressure much reduced or imperceptible in limbs long paralyzed from poliomyelitis. The lowness of the pressure was proportional to the degree of impotence and atrophy of the limb, showing that the ischemia thus produced by the spinal focus contributes to augment the atrophy of the paralyzed member.

19. **Intraspinal Injection of Air in Tuberculous Meningitis.**—Ramond and François reiterate that tuberculosis is essentially curable, especially when it involves serous membranes, and their experience during the last two years with injection of air seems to suggest that this treatment has a future. It has been found useful in tuberculous peritonitis and pleurisy, by various workers, and Ramond has found it effectual also in arthritis, orchitis and meningitis. The procedure seems to be absolutely harmless by this technic: The lumbar puncture is done on the reclining patient and about 40 c.c. of fluid is withdrawn. The air is drawn into a Roux syringe through a

long, red hot platinum needle. This sterilizes and warms the air, and it is then slowly injected through the puncture needle which has been left in place. The amount of air injected should not be over one half or two thirds of the amount of fluid withdrawn. The injection of air can be repeated for five or six consecutive days but no longer, as the nitrogen in the air is not readily absorbed; if oxygen is used, instead of air, it can be kept up indefinitely. The results obtained with this treatment in tuberculous meningitis have been encouraging, but the patients all died finally, after a period of improvement. He reports here a recent case, the young man in coma, in which the improvement for two weeks was so striking that complete recovery seemed inevitable. The tenth day after suspension of the air injections the patient, a soldier of 25, became unconscious and died in three days. It is possible if the injections of air were made at once, as soon as the diagnosis is established, they would prevent the extension of the tuberculous process, especially if the air were injected into the lateral ventricles. Experience has confirmed the tolerance of the ventricles for injected air. In future Ramond will inject more air; the amounts hitherto used, from 2 to 15 c.c. were probably too small.

20. **High Blood Pressure with Nonvalvular Heart Disease.**—Merklen refers to cases of disordered heart action with tachycardia in soldiers free from valvular defect. He was inclined to class these cases as a nervous functional disturbance, but study of the arterial blood pressure showed that it was abnormally high in a large proportion of the men. In less than six weeks he had sixty such cases in the sector in his charge. No factors could be discovered common to all; some of the men had never been on the firing line. Local exploration and radiography failed to reveal any organic changes to explain the numerous cardiac and circulatory manifestations, and only in two of the men did the methylene blue test suggest slightly defective elimination by the kidneys. The lapse of years will throw light on these cases. At present, he adds, all that can be said of them is that they are unfitted for exertion and fatigue. They can be utilized for light duty, but to impose more will only unfit them soon for any kind of military service.

22. **Reverse Treatment of Syphilis.**—Bory has been attacking syphilis with massive doses of mercury to start with and then continuing with small doses of salvarsan preparations, thus reversing the usual procedure. He is physician in chief of the skin and venereal diseases center of region 20, and the effects of this method of treatment during the last six months have been excellent, as shown by the clinical course and repeated Wassermann tests. He uses mercury benzoate in a 3 or 6 per cent. solution, by intravenous or intramuscular injection, commencing with 4 cg. every day or two and increasing to 5, 6 or 7 cg. By the twelfth to fifteenth day the dose of 8, 9 or 10 cg. is borne without difficulty. He thus pushes the mercury for twenty-five or thirty days, the total dose from 1.10 to 1.20 gm. of the mercurial salt, in eighteen or twenty injections. The sodium chlorid proportion is only 30 or 40 centigrams to the gram of the mercurial salt. He has thus treated 1,200 men; the average stay in the hospital for the men was not over thirty days. The contagious manifestations generally disappeared by the tenth day or sooner, only rarely later than the fifteenth. He gives arsenic only later when the Wassermann reaction indicates that treatment had better be continued. One or two injections then of novarsenobenzol answer the purpose.

Paris Médical

Dec. 8, 1917, **7,** No. 49

25 *Examination with Digestive Disease. P. Le Noir and M. Delort.—p. 469.
26 Balantidium Enteritis. M. Labbé.—p. 472.
27 Paralysis of the Ulnar Nerve. André-Thomas.—p. 473.
28 Physical Measures in Treatment of Pulmonary Tuberculosis. F. de Courmelles.—p. 476.

25. **Examination in Cases of Digestive Disease.**—Le Noir and Delort comment on the numerous elements that have to be taken into account in investigating alleged digestive affections in soldiers. They have a special chart recording the antecedents, the stomach signs, the intestinal signs, and the signs from other organs. Vomiting as a symptom is particularly instructive when food taken a day or two before is recognized. Blood shows ulceration. Pain is instructive if the point, the duration and the evolution can be specified, and the pain differentiated from burning, distention, oppression and other sensations. The dyspepsia cases can be classified as primary: the stomach mainly involved; secondary to a bad general condition or overexertion and tending to subside when the cause is removed; and reflex dyspepsia, secondary to some focus of disease elsewhere, irritating the nerves. Gastroneuroses must be excluded. It is very important to consult the man's individual chart booklet, note the weight in comparison with what it has been, and also to record the present findings as completely as possible. The final decision on the case is thus facilitated.

Presse Médicale, Paris

Nov. 29, 1917, **25,** No. 66

29 The Histologic Lesions with Wounds of the Lungs. R. Grégoire and A. Courcoux.—p. 673.
30 *Treatment of Gonorrhea in the Male. A. Renault.—p. 674.
31 Mechanism and Prevention of Aerophagia. G. Lyon.—p. 676.

30. **Treatment of Gonorrhea.**—Renault mentions a number of minor points useful to bear in mind in treating acute gonorrhea. Among them is the necessity for a nourishing diet, to keep up the strength, but avoiding acids as they render the urine more irritating. He specifies oranges, lemons and salads, on account of the vinegar, as better avoided, and particularly asparagus during its season. Copaiba and santal reduce the secretion but at the expense of increasing the inflammation in the urethra. They are not indicated until the end of the second or third week. Then, if the stomach can stand them and they are kept up for four or five weeks, the secretion dries up completely in most cases without local measures. Acute gonorrhea is rebellious only in those with sluggish metabolism. These require three or four permanganate flushings. But they must be given by a physician or trained attendant. One a day is enough, he thinks. He regards as chronic any case that persists over three months. The only effectual treatment when the microscope shows no further gonococci is with copious irrigation of the urethra and bladder with permanganate or silver nitrate after preliminary dilatation of the urethra, repeating every third day, supplemented with massage of the prostate. If this fails, he orders an iodotannic or tannin bougie every other night. Throughout the entire course of treatment he insists on the patient's drinking water as the only beverage, and for two or three months after complete subsidence of all urethral oozing. Both physician and patient must bear in mind that the hard thing is not to suppress the oozing, but to keep it suppressed. The least imprudence will bring it back again.

Progrès Médical, Paris

Nov. 10, 1917, **32,** No. 45

32 *Sciatica with High Blood Pressure. J. Galtier.—p. 377.
33 *Asthenia from Overexertion at the Front. Cheyrou.—p. 378.
34 Metal Mirror in Breast Pocket Arrests Large Flying Piece of Shell. Menu and Bonnette.—p. 381.

32. **Sciatica and Abnormally High Blood Pressure.**—Galtier describes a number of cases which were diagnosed as sciatica but, he thinks, belong in another category. Evidences of high blood pressure, slight congestion of the face, nightmares, buzzing in the ears, trembling of the hands and tongue, and a general neurasthenic condition—all in men past 40—form the basis on which are superposed disturbances in the gait, in the reflexes, and pains in the leg, with various paresthesias. The pains are diffuse and multiple, but the cause is not in the sciatic nerve but in the underlying "presclerosis." Treatment with 1 or 2 gm. of potassium bromid daily, with from 0.5 to 1 gm. of the iodid; mixed and fractioned in two doses, plus a daily laxative, has proved effectual in his hands, possibly supplemented with a little massage of the seats of the pain. After a few weeks of this treatment fifty-two of the 166 soldiers in this class could be sent back to the front. Others required a supplementary course of spa treatment, while for some with high tension and great asthenia, discharge from the army was advised, as recurrences are the rule.

33. **Fatigue in Men at the Front.**—The regimental physician often encounters pathologic conditions for which fatigue is the main factor. Cheyrou has found that this was the clue to many clinical pictures, and that improvement promptly followed treatment addressed to the fatigue. Lumbago is the simplest and earliest form, and the horizontal position for twenty-four hours banishes it as a rule. Fatigue fever is not uncommon, after special and prolonged exertion, with constipation, pains back of the eyes and in the back and along the tibias, with acceleration of the pulse and rise of temperature. All of this may disappear under a few days of bed rest, repeated laxatives and restriction to water, with administration of quinin. In the severer cases the digestive apparatus, kidneys or heart may bear the brunt of the attack. Some of the men returning from the trenches at Verdun had reached such a stage of autointoxication from the prolonged constipation, that enteritis followed and several weeks elapsed before normal conditions were restored. The nervous system shows the effect of excessive fatigue in various ways that he describes. These asthenic states, scarcely known before the war, are prevalent, and reduce the resisting power to infections. Prophylaxis should include measures to keep the diet varied and oppose constipation. Suitable provisions for sleeping would aid much in proper recuperation. Overexertion might be avoided by better distribution of energy and labor. The watches should be relieved oftener, and supplementary rations and hot drinks supplied in the hardest sectors. As fatigue reduces the alkalinity of the blood, alkalies should be supplied artificially, and diuretics and laxatives given to keep the emunctories open. Cheyrou suggests in treatment progressively large injections of strychnin to reenforce the nervous system, giving drops of epinephrin to restore muscular tone. He advises further utilization of physiologic serum with epinephrin. Administration of extracts of the suprarenal capsules has aided materially in overcoming asthenia and hastening elimination of toxins. Extract of testicles might be given with it, concluding with a course of tonics and means to recalcify the organism.

Chirurgia degli Organi di Movimento, Bologna

May, 1917, **1**, No. 2

35 *Lesions of Radial Nerve after War Wound of Upper Arm. G. Ruggi.—p. 167.
36 War Wounds of Vessels in the Limbs. M. Donati.—p. 191.
37 *Inability to Straighten the Spine as Effect of War Traumatism. P. Rédard.—p. 257.
38 *Congenital Genu Recurvatum and Its Treatment. M. Francini. —p. 268.
39 *Vitalization of Artificial Limbs. (Cinematizzazioni.) A. Pellegrini. —p. 292.
40 *Fracture of the Calcaneum. F. Delitala.—p. 303.

35. **Indirect War Wounds of the Radial Nerve.**—Ruggi refers to radial paralysis and contracture and pains secondary to firearm wounds of the vessels and nerves in or near the axilla and the inner part of the upper arm. The paralysis and other disturbances were benefited by operations in the axilla or upper arm. Ten cases are described with colored illustrations. Although the radial nerve itself had not been injured, yet the nerve was compressed or irritated by the cicatricial changes in the vessels or other nerves. In none were there any mishaps from the intervention.

37. **Bending of the Spine as War Traumatism.**—Rédard gives photographs of men who are unable to stand up straight, the attitude resembling that of one trying to touch the floor with his finger tips. One illustration shows twelve men with this form of contracture. The mild cases, with signs of hysteria, recover without much being done, but the medium cases require systematic treatment, and the grave cases with organic lesions in the spine and emaciation are usually rebellious to treatment. Psychotherapy and contrasuggestion are useful aids to the usual physical therapy. Men with the mild forms do best when sent home, and in any event should be kept apart from others with the same trouble. Attempts to straighten the spine should be made very gently. Forcible correction in psychoneuroses may induce deplorable aggravation. As the trouble is almost invariably curable sooner or later, the question of discharge from the army on account of disability should not be even suggested.

38. **Congenital Genu Recurvatum.**—Francini gives an illustrated description of a severe case neglected till the age of 3 in which he restored approximately normal conditions by severing the patellar ligament and, after correcting the abnormal arrangement of the parts, restoring the continuity of the patellar ligament by slitting and turning over part of it. The procedure required differed for each knee. A plaster cast was applied to each. The long disuse of the quadriceps renders the joint weak, but time will correct this.

39. **Cinemátic Plastics.**—Pellegrini gives twenty-two illustrations showing various means by which the stump after amputation can serve for direct differentiated muscular control of the prosthesis. He is seeking to realize in practice Vanghetti's theory of vitalization of artificial limbs.

40. **Fracture of the Heel Bone.**—Delitala cites from the literature numerous cases of fracture of the calcaneum with the ultimate outcome. The data testify to the peculiar gravity of these fractures as interfering with the nourishment of the parts and the use of the foot. Pains, contracture, atrophy or deformity of the foot are common, and the wage-earning capacity is reduced on an average by 30 per cent. Two cases are reported in detail, one with disability of 60, the other of 35 per cent.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 25, 1917, **38**, No. 94

41 *Tests for Aldehyd in Foods. E. and E. Pittarelli.—p. 1243.

41. **Tests for Aldehyd in Foods.**—Pittarelli discusses the various tests for formic aldehyd and its differentiation from acetic aldehyd. The Rimini and Fischer tests cannot be applied to foods, as in the presence of sulphydric acid, creatinin or acetone the findings are misleading. He gives the technic for a simple hydrazin-mercury test which he says is reliable both quantitatively and qualitatively.

Pediatria, Naples

December, 1917, **25**, No. 12

42 History of Antimony as Remedy in Internal Leishmaniosis. R. Jemma.—p. 705 .
43 *Inherited Syphilis as Basis for Tuberculosis of Bones. G. Caronia and R. K. Marinucci.—p. 713.
44 *Fuchsin in Treatment of Suppurating Skin Disease in Infants. A. Gismondi.—p. 718.

43. **Inherited Syphilis and Surgical Tuberculosis.**—Caronia has noticed in the tuberculosis dispensary at Naples that tuberculosis of the bones often develops in persons with inherited syphilis. He tabulates the findings in seventy children from 2 to 13 years old with Pott's disease or other tuberculous affection of bones or joints. They show that in 72.3 per cent. inherited syphilis was beyond question. This demonstrates the importance of treatment as for syphilis, in addition to the measures addressed to the tuberculosis. His experience with this combined treatment was quite encouraging.

44. **Fuchsin Treatment of Skin Disease in Infants.**—Gismondi refers to Triboulet's method of treating impetigo and suppurating skin disease in infants by the application of Ziehl's fuchsin stain such as is used in the laboratory (1 gm. fuchsin; 10 gm. alcohol; 5 gm. phenic acid, and 100 gm. distilled water). Triboulet washes off the scabs with 1 per cent. zinc sulphate and then applies the fuchsin stain, daily, pressing it into the lesion on cotton, but Gismondi has found it equally effectual applied without the preliminary rinsing. Even with only two applications a week, the impetigo was soon nearly entirely conquered. This fuchsin treatment proved especially effectual with scabbing of the scalp, succeeding in every case. He is planning to apply this method to other skin diseases in infants, saying that the drawback of the discoloration is abundantly compensated by the therapeutic results.

Policlinico, Rome

Nov. 25, 1917, **24**, No. 48

45 *The Advanced Surgical Station. V. Montenovesi.—p. 1405.
46 Factitious Nodules from Injection of Insoluble Substances. A. Ascarelli.—p. 1407.
47 *Management of Fracture and Dislocation of the Pelvis. L. G. Gazzotti.—p. 1410.

45. **Advanced Surgical Station.**—Montenovesi describes some ready-made barracks that can be set up for an advanced surgical station at a twentieth of the expense of a surgical ambulance.

47. **Fracture and Dislocation of the Pelvis.**—Gazzotti gives illustrations of a hammock device in which the pelvis rests, raised slightly above the level of the bed, with arrangements for immobilization and extension.

Riforma Medica, Naples

Nov. 24, 1917, **33,** No. 47

48 *Tardy Manifestation of Inherited Syphilis. P. Gagliardo.—p. 1093.
49 Vital Statistics in Italy for 1914. A. Botti.—p. 1104.

Dec. 1, 1917, **33,** No. 48

50 *Soldier's Heart. E. Tedeschi.—p. 1113.
51 *War Wounds of the Thorax. O. Finzi.—p. 1116.

48. **Defective Development from Tardy Inherited Syphilis.**—Gagliardo gives the history of a man of 20 whose body seemed to stop growing at 15. The trunk was that of a boy of 9; the limbs and hair corresponded to 14 or 15, the whole aspect of the eunuchoid type. The development of the genital system is defective also in two sisters and a brother. For three years the young man has been presenting symptoms of cirrhosis of the hypertrophied liver, with grave changes in the blood picture, resembling in some points those of hemolytic jaundice. But all the symptoms and signs presented, as also the defective physical development, might all be explained by the multiple localizations of the inherited taint and their tardy manifestation. The father gives an intense Wassermann reaction.

50. **Soldier's Heart.**—Tedeschi declares that in all that has been written about "soldier's heart" too little attention has been paid to the influence of digestive disturbances on the cardiovascular apparatus. Many of the men reaching his service at Genoa with the diagnosis of heart disease presented likewise symptoms on the part of the stomach, and these revealed digestive disturbances which threw light on the heart symptoms. One robust young man had attacks of pain in the heart and back of the sternum, palpitations, arrhythmia, the pulse becoming almost imperceptible, while the skin grew pale. He had been sent back from the front as suffering from heart disease, but Tedeschi noticed that these attacks occurred only during digestion, and as the digestion returned to normal under the proper measures, the heart symptoms disappeared likewise. In other cases the stomach was much distended with gas, pushing up the diaphragm and hampering the work of the heart, and the men complained of the exacerbation of their heart trouble at such times. They did not notice that when relieved of the gas, their "heart trouble" disappeared with it. The concomitant or superposed stomach disturbances were never mentioned by the patient or in the report that had accompanied him. The entire attention had been focused on the heart. The distention of the stomach was from fermentation in some cases and from motor derangement in others, but in some cases it was undoubtedly the result of swallowing of air; sometimes from this alone. In the cases of primary aerophagia he often found the nose more or less obstructed and the men breathing through the mouth, taking very deep breaths occasionally, the air then passing in part into the stomach. These men were all nervously excitable from their experiences at the front. By curing the hyperplastic rhinitis the aerophagia subsided and with it the supposed heart disease. The nervous excitability renders the heart more readily upset.

51. **War Wounds of the Chest.**—Finzi states that the mortality was 17.3 per cent. in his twenty-three cases of wounds of the chest, one man succumbing to pneumonia four days after the wound, and another to secondary hemorrhage eleven days after the wound. The general treatment was by rapid and thorough disinfection of the wound, keeping the man absolutely still thereafter, in a semiseated posture, with small doses of morphin, injections of stimulants, liquid diet, icebag to the thorax and gelatin injections and enemas if needed. A pad of gauze is applied over the wound to protect it while allowing free outflow of blood.

Cronica Medica, Lima, Peru

November, 1917, **34,** No. 653

52 *Therapeutic Action of Lumbar Puncture in Headache with Meningeal Reaction. C. A. Bambaren.—p. 396.
53 *Tabetic Amaurosis. L. D. Espejo.—p. 403.
54 The System of Axis-Cylinders. J. S. Losno.—p. 411.
55 Cesarean Section plus Hysterectomy for Deformed and Contracted Pelvis plus Eclampsia. J. A. Maldonado.—p. 419.
56 *Postoperative Treatment of Echinococcus Cysts. A. A. Parodi.—p. 423.
57 The Tuberculous from the Medicolegal Standpoint. I. Castellanos.—p. 425.

52. **Lumbar Puncture in Treatment of Headache with Meningeal Reaction.**—Bambaren expatiates on the necessity for early lumbar puncture in every case of severe and persisting headache; left to itself, the pressure inside the skull which is responsible for the headache is liable to do irreparable harm. Withdrawal of some of the fluid breaks up the vicious circle. The number of drops to the minute gives a good idea of the degree of pressure, but a manometer is a more reliable guide. In a case reported he withdrew 40 drops each time, and this relieved the man at once from the intolerable headache which had tormented him at times. The positive Wassermann reaction in the serum, and certain nervous symptoms suggested incipient general paralysis, but after the lumbar puncture and its repetition on renewal of symptoms three months later, there has been no further headache to date and the other symptoms seem to have retrogressed also. Bambaren compares with this the literature on lumbar puncture for headache, and cites a number of instances in which a flow of the cerebrospinal fluid through the nose or ears cured persisting headaches. In Salmon's case, mere bending the head forward relieved the intracranial pressure and the headache stopped. Mingazzini has reported a definite cure in twenty-four of his forty-seven cases, and marked improvement in all but eight of the others. Bambaren cites further Spiller and de Schweinitz' recent report on the brilliant effects of lumbar puncture in cases of choked disk, removing small quantities of the fluid at a time. When the spinal cavity seems to be shut off from the intracranial cavities, puncture of the corpus callosum should be considered.

53. **Tabetic Blindness.**—The blindness came on gradually first in one eye and after some time in the other. There had been lancinating pains and some tendency to ataxia for a few months. The patient was a man of 49, and there was no history of headache or ocular paralysis. Espejo compares with this case a number from the records. All teach the necessity for curing the syphilis in the secondary stage at least as the only means to certainly ward off atrophy of the papilla from tabes later.

56. **Postoperative Treatment of Echinococcus Cysts.**—Parodi refers to echinococcus cysts in the liver treated by evacuation and suturing the lips of the incision to the wound—marsupialization. In the three cases reported, one girl and two young women had been treated in this way. After lateral laparotomy the large cavity was treated with ether, a wick of gauze moistened with ether being left in the opening, and healing was complete, without suppuration, in thirty days. In the third case a similar operation had been performed three years before, marsupializing the cyst cavity. It had suppurated and the suppuration kept up for a year. Two years later another cyst, also in the liver, was treated in the same way, 2,500 c.c. of fluid being evacuated. The third day the presence of food in the cavity revealed perforation of the stomach. This was tamponed and as soon as this was healed, the cyst cavity—which had been suppurating a little—was treated with ether, and soon healed. The ether treatment consists in rubbing with ether and draining with a wick dipped in ether.

Gaceta de la Academia de Medicina, Mexico

January-June, 1917, **11,** No. 1-6. First third, pp. 1-37

58 *Gonorrheal Ophthalmia. E. F. Montaño.—p. 1.
59 *Surgical Treatment of Ascites. M. Toussaint.—p. 6.
60 *Calcium. F. Bulman.—p. 11.
61 *Removal of Sebaceous Cysts. R. E. Cicero.—p. 20.
62 Adenoid Vegetations. P. P. Peredo.—p. 23.
63 Mexican Typhus in Children. (Tabardillo.) G. Escalona.—p. 35.

58. **Gonorrheal Ophthalmia.**—Montaño reviews the diagnosis, prognosis and treatment by the nonspecialist. From a few hours up to six days after infection the conjunctiva begins to show a yellowish, blood-stained secretion which soon changes to a greenish yellow. The cornea may begin to ulcerate in twenty-four hours. The prognosis is graver in adults, probably from the mixed infection; 95 per cent. of the new-born recover under proper treatment while 45 per cent. of the adults affected lose vision in that eye, even with specialist care. The main point is prophylaxis. It is more difficult in men as their hands get contaminated at each micturition, but towels, handkerchiefs, bath water, etc., may convey the contagion, as also animals. Children with vaginitis should wear closed drawers. Washing the hands, after relieving any calls of nature, should be enforced for young and old. He emphasizes further the necessity for the physician, and those tending this class of patients, to wear spectacles of mica or plain glass to protect their own eyes against pus that may spurt as the lids are separated. He mentioned that this accident happened to one of the members of the Academia present in the audience. Families should be impressed with the necessity for avoiding promiscuous use of cloths, towels, etc., at all times and most urgently when there is gonorrhea in the environment. He gives minute directions for washing the conjunctiva clean every two or three hours, day and night, and cauterizing with silver nitrate once or twice a day, followed by some other silver salt. As every effort must be made to keep the conjunctiva clear of secretions, the eye should not be bandaged. If hot compresses are called for, they should be frequently renewed. Heat can be applied directly to the cornea with the actual cautery, not letting it touch the tissues.

59. **Diversion of Ascitic Fluid.**—Toussaint made a curved incision, the upper end 3 cm. above Poupart's ligament and the lower end 6 cm. below the junction of the internal saphenous vein with the femoral vein. The saphenous vein was then severed and carried up into the peritoneal cavity through a subcutaneous tunnel, hoping thus to drain the ascitic fluid into the blood. The man's condition was immeasurably improved although there was much edema in legs and lower trunk at first.

60. **Calcium.**—Bulman in the course of his study of the aims and uses of calcium in physiology and therapeutics, remarks that the Indians of Mexico keep their teeth to an advanced age but develop caries when they become civilized and change their dietetic habits. The early wearing out of teeth he explains by the fine bolting of the flour which deprives it of the phosphates, etc., in the outer part of the grain. They are needed to keep the teeth strong. Especially during pregnancy, this lack of the earthy phosphates required by the mother and fetus may result in the woman's losing some of her teeth. He advises addition of earthy phosphates to the food during both pregnancy and lactation. Calcium phosphate seems indicated here. One nursing mother taking it found the signs of rachitis in her infant disappear under it.

61. **Sebaceous Cysts.**—Cicero makes a small incision, in the skin alone, with the actual cautery, carrying it across about half the diameter of the cyst. Then he introduces a grooved sound between the skin and the cyst, and loosens up the skin all around. A spatula is then taken to loosen up the cyst all around and below, and gently work it out through the incision. This is usually easily done as the cyst is so elastic, and it slips out like a bag of oil without breaking. The cavity left is sterilized with tincture of iodin. He has been much gratified with the ease and harmlessness of this technic (Sabouraud) for getting rid of these often disfiguring cysts.

Prensa Medica Argentina, Buenos Aires

Nov. 10, 1917, **4**, No. 16

64 *Technic for Herniotomy. E. Finochietto and C. M. Squirru. —p. 207.
65 *Pathologic Histology of Amebic Dysentery and Abscess. S. Dessy and R. A. Marotta.—p. 208. Conclusion.
66 *Syphilis in the Etiology of Gastric and Duodenal Ulcers. M. R. Castex. Conclusion.
67 Intravenous Tartar Emetic in Treatment of Condyloma Acuminatum. S. Mazza and C. Matta.—p. 213.
68 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 215. Continuation.

64. **Operative Treatment for Inguinal Hernia.**—The method described is a modification of the Postemsky technic for obliterating the external inguinal ring, similar to Andrew's modification of the Mugnai-Aguilar technic for the internal ring. The method is particularly applicable for extensive and recurring hernias, when the adjoining muscles cannot be relied on for solid support. The technic has been applied in a number of cases since 1914. In two cases of bilateral inguinal hernia this technic was applied on one side and the Bassini on the other. The hernia recurred in both cases on the Bassini side, but there has been no recurrence in any instance with the modified technic described with illustrations. There is no superposing of the cicatrix in the different tiers and the opening is closed with three layers instead of one or two. The cord rests on a smooth surface instead of on a row of sutures or a freshened surface on which adhesions are liable to form. On the other hand, the direction of the cord is somewhat altered and the cord is left next to the skin. The first plane of sutures takes in Poupart's arch on the outer side, and on the inner side it includes the inner lip of the severed great oblique and the margin of the lesser oblique or the tendon below. The sutures are taken in the outer lip of the severed aponeurosis of the greater oblique at some distance back of the edge. The free edge left is drawn across over the line of sutures and is sutured along the line where it reaches, some distance beyond the first line of sutures. The cord can be all outside or part can be sutured in.

65. **Pathologic Histology of Amebiasis.**—Two large plates show ten microscopic views of the findings in the bowel and liver in amebiasis. They indicate that the ameba penetrates into the bowel wall from the submucosa into the lumen, reaching it in the blood. The abscess in the liver seems to be the work of the ameba alone as long as it has not opened. After spontaneous or surgical evacuation, the pyogenic germs are liable to become installed secondarily.

66. **Syphilis in the Etiology of Gastric or Duodenal Ulcers.** —Castex' plea that treatment for syphilis is often called for to remove the cause of ulceration in stomach or bowel was summarized recently, page 134. He here gives the details of eight clinical cases in which the disturbances returned after operative treatment. There was great improvement in every case but it was only temporary. In each case a history of inherited or acquired syphilis was elicited, often ignored by the patient, and the improvement or complete cure under specific treatment confirmed the importance of this factor in the lesion. He regards the night pain in such cases—to explain which various thories have been advanced—as further evidence of the syphilitic basis of the trouble. Chronic suprarenal or thyroid insufficiency probably cooperates in certain cases with the syphilitic vascular lesion primarily responsible for the gastric or duodenal ulcer. He declares that surgical treatment is indispensable in the various complications and mechanically facilitates healing, but does not remove the cause. The ordinary medical treatment for gastric or duodenal ulcer is merely symptomatic, and is superfluous if the lesion is amenable to antisyphilitic measures. Conditions are the same here as in the brain and spinal cord lesions of tertiary syphilis. No treatment can restore irreparable lesions.

Revista Med.-Cirurg. do Brazil, Rio de Janeiro

September, 1917, **25**, No. 9

69 Oswaldo Cruz. C. Seidl.—p. 309.
70 *Otogenous Meningitis without Suppuration in the Middle Ear. F. Eiras.—p. 325.

70. **Otogenous Meningitis.**—Eiras refers to the meningitis which develops as the first clinical objective manifestation of a nonsuppurating otitis. His experience confirms in every detail Baldenweck and Roger's conclusions from their cases (summarized in The Journal, June 23, 1917, p. 1948). Eiras warns that the ear should always be suspected when symptoms suggest oncoming meningitis or meningism. Prompt opening up of the mastoid region may ward off further inroads not only of the meningitis but also of the otitis and save the hearing. In a recent case of his own a boy of 6 complained of earache and within twenty-four hours developed temporal headache, nystagmus, vertigo and stiff neck, with slight fever, while the drum membrane was red and

bulging. Without waiting for manifest suppuration, Eiras trephined the mastoid antrum. A small amount of pus was found and there was profuse hemorrhage. All the symptoms vanished as if by magic. The question as to whether he had not been overprecipitate in operating was answered three days later when, in changing the dressings, the antrum was found full of pus. In contrast to this experience, in another case a man with slight suppuration in one ear showed a tendency to somnolency. Eiras accepted this as a sign of incipient meningitis and advised an operation. The warning was not heeded, the man attending to business as usual. The meningitis developed as feared and proved fatal in twenty-four hours. In this case the drum membrane was widely open, which shows that in these menacing meningitis cases it is unwise to waste any time delaying to see the effect of paracentesis. In another case Eiras cured an extremely severe gonococcus otitis and mastoiditis with septicemia by opening up the antrum and sterilizing it with a silver salt, This arrested the ear affection and the toxic cachexia.

Revista de Medicina y Cirugia, Havana

November, 1917, **22,** No. 22

71 *Second Cesarean Operation for Deformed Pelvis. J. F. Arteaga and J. A. Presno.—p. 587.

December, 1917, **22,** No. 23

72 History and Present Status of Medical Press of Cuba. J. Le-Roy y Cassa.—p. 617.
73 Propaganda for Cremation. C. Hoyos.—p. 638.
74 The Medical Press and Medical Education. G. Aldereguia.—p. 642.

71. **Repeated Cesarean Section.**—At the first cesarean section both tubes had been ligated, but nearly two years later the woman was at term with a second pregnancy. She presented also elephantiasis of the legs and acute bronchitis. The second cesarean section was completed by resection of the tubes between two ligatures, and recovery was prompt after intercurrent pneumonia.

Semana Medica, Buenos Aires

Aug. 23, 1917, **24,** No. 34

75 *Male Characters in Woman with Hypernephroma. A. Guemes.—p. 207.
76 Implants in Treatment of Ankylosis. E. M. Olivieri.—p. 223.
77 *Physical Examination of Recruits. J. A. Lopez.—p. 233.

75. **Suprarenal Virilism.**—Guemes reproduces the photograph of a rather handsome young woman and another photograph showing the head of what seems to be a bald and heavily bearded man of 50. Both photographs were of the same person at a fifteen year interval, a hypernephroma in the cortex of the right suprarenal having transformed the woman thus completely. The microscopic findings are also reproduced. Necropsy revealed also sclerous atrophy of the ovary, an adenoma in the thyroid and considerable atrophy of the pancreas. When we encounter a woman with pronounced virilism, the condition of the suprarenals should be investigated and the proper measures taken to ward off irreparable lesions.

77. **Examining for the Military Service.**—Lopez gives a list of fifteen things some of which are liable to be overlooked unless systematically tested for in examining for the military service. They include chains of glands in the neck; lack of teeth, eight or nine as the minimum; lack of free breathing through the nose, of free movement in shoulders, elbows and hands; vascular instability with tachycardia and supplementary venous pulsation in the thorax; unequal entrance and expulsion of air in the two apices, auscultated at the middle of the line from the spinous process of the seventh cervical vertebra and the end of the spine of the scapula; large liver, determining the outlines above and below; absence of testicles, tumor in testicle; deformity of knee or foot; and large callouses on the sole. He begins at the head and examines downward, asking the man if he has any disease, and about his family, brothers and sisters, deaths among them; if any are sick; his food; married or single, and schooling. By asking the questions rapidly, the man has no time to think up misleading answers. As some questions are asked in a low tone, his hearing is tested at the same time, while his answers disclose his power of attention, perception and memory. In four or five minutes the examination can be complete if done by a system such as this.

Kitasato Archives of Experimental Medicine, Tokyo

November, 1917, **1,** No. 2

78 *Serovaceine from Avirulent Living Tubercle Bacilli. K. Shiga.—p. 157.
79 *Experimental Purpura Produced by Antibloodplatelet. T. Watabiki.—p. 195.
80 Fate of Tubercle Bacilli Inoculated into Abdominal Cavity of White Rats. Y. Watanabe and I. J. Navy.—p. 235.
81 Regeneration of Cells in Bird Internal Ear Destroyed by Sound of Explosion. N. Satoh.—p. 251.

78. **Serovaccine for Tuberculosis.**—Shiga has been working for years to perfect a serovaccine made from living tubercle bacilli rendered avirulent by being treated with flavin, iodeosin or erythrosin, or more than one stain. The serovaccines are more readily absorbed than ordinary vaccines, and they induce a milder reaction while immunization proceeds more rapidly and surely. Shiga's report is in German, and reviews the various steps of his research in this line under Ehrlich and since his return to Japan, his experimental research and the clinical application of the serovaccine. Its chief advantage is that, while avirulent, it yet contains all the antigens of the tubercle bacilli.

79. **Purpura Induced by Antibloodplatelet.**—Watabiki's long report is in English, and is accompanied with several colored plates showing the findings in guinea-pigs.

Mitteilungen a. d. med. Fakultät der k. Univ. Tokyo

May 4, 1917, **17,** No. 3

82 *Elasticity and Solidity of Bone Substance. T. Mayeda.—p. 289.
83 *Macroscopic and Microscopic Findings in Remaining Lung After Removal of One Lung. S. Takenaka.—p. 339.

82. **Elasticity of Bone.**—Mayeda's tests were made on rods of bone cut from twenty-nine cadavers—a total of 237 specimens. The findings are tabulated with minute detail for each cadaver and compared with the findings from similar rods of iron and wood.

83. **Findings in Lung after Removal of the Other Lung.**—Takenaka experimented on rabbits, dogs and rats and compares the findings with those of other workers in this line. Some of the macroscopic and microscopic findings are shown in eight plates. The remaining lung grows appreciably larger in the course of a few months. Both the lung and heart grow heavier and it is not always the right heart that shows this most. The remaining organs in the thorax seem to keep their relative position. The remaining lung keeps unusually full of blood, but this plethora gradually subsides.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Oct. 27, 1917, **2,** No. 17

84 *Localized and Tardy Tetanus. W. M. J. Schellekens.—p. 1530.
85 The Mechanism of the Development of Insanity. C. T. van Valkenburg.—p. 1543.
86 *Determination of the Sulphates in the Urine. A. L. Flohr.—p. 1553.
87 Combinations of Drugs. D. H. Wester.—p. 1557.
88 *Deceptive Cures of Appendicitis. E. J. Diddens.—p. 1560.

84. **Localized and Tardy Tetanus.**—Schellekens writes from the Netherlands ambulance in France to describe various experiences with tetanus. That district is exceptionally infested with tetanus germs. He shows by ten typical examples from different periods how tetanus has been conquered. First, early general tetanus was abolished by the preventive serum, and now tardy tetanus has also been conquered by the preventive serum given before any new operation that has to be done. Anaphylaxis is warded off by the preliminary injection of 0.1 to 0.5 c.c. of the serum. Among the cases related is one in which the tardy tetanus, after a secondary operation, was restricted entirely to one side, in others to the head or one limb. This localized tetanus was scarcely known before the war, except in mice and rabbits, but the preventive serum after the war wound has transferred man from the extra susceptible class—which includes the horse—to the slightly susceptible class, to which the rabbit belongs. In the rare cases in which early general tetanus develops, it

will almost always be found that there was a delay of a day or two after the wound before the preventive injection. In one case the wound was in the shoulder and the localized tetanus affected both the head and the arm. It developed two days after removal of a projectile that had entered the shoulder from the rear a week before. Antitetanus serum was injected around the wound, up to 50 c.c., and the man was given 3 gm. chloral daily and morphin at night. In two other cases of shoulder wound the localized tetanus developed after the men had begun correcting exercises to loosen up the stiff shoulder. These cases impress the necessity for preventive antiserum not only before a second operation but also as a preliminary to exercising the parts. In another case the projectile had entered and been removed from the lumbar region. An operation for hernia four and a half months later roused the tetanus germs, and rapidly fatal general tetanus developed although the operation had not involved the region of the war wound. Evidently anything that depresses the vitality of the tissues is liable to throw down the barriers against the tetanus germs. In another case, fifty days after a war wound of the back of the shoulder, general tetanus developed the day after the shoulder had been subjected to mechanical exercises. The peculiar stiffness of the shoulder and curvature of the spine must have been evidence of localized tetanus already installed but this was not recognized at the time. The man recovered after a very serious course, sometimes requiring morphin in the night as the spasms involved the muscles of respiration. As he threw off the tetanus, the spine became straight once more. Nearly all these cases were in the hospital for six or seven months before they could be discharged. In another case the localized tetanus developed a week after the mechano-exercises had been begun. The wound was in the left upper arm and the tetanus gradually spread to the other arm and the thighs and jaws, but subsided slowly in a few weeks. The experiences related confirm, he says, the necessity for not being stingy with the antiserum. With preventive injections before secondary operations, therapeutic exercises, etc., tetanus can be driven from its last stronghold.

86. **Determination of Sulphates in the Urine.**—Flohr gives comparative tables of the findings with various technics. They apparently demonstrate the superiority of the volumetric benzidin method proposed by Rosenheim and Drummond (*Biochemical Journal*, 1915).

88. **Deceptive Cures of Appendicitis.**—In the two cases reported, severe appendicitis in older schoolchildren apparently subsided completely and nothing further was heard from the appendix for about thirty years. Then peritonitis developed suddenly which nearly proved fatal. The appendix was found chronically diseased and open, part having sloughed off in one case.

Hospitalstidende, Copenhagen

Nov. 17, 1917, **60**, No. 47

89 *Variations in the Leukocyte Count in Different Positions of the Body. G. Jørgensen.—p. 1141. Commenced in No. 46, p. 1117.

89. **The Leukocyte Count in Different Positions.**—Jørgensen reports extensive study of the blood count after change of a position that has been held a long time. The tables show that the leukocyte level is higher reclining than in the seated or erect position. The difference between the two levels may be up to 100 per cent. and it seems to be immaterial whether the change is made abruptly or slowly. The influence of position has not been taken into account hitherto in estimating the blood count, and thus errors may have crept in. Another source of error is also shown by the tabulated findings in that the leukocyte count is always higher later in the day. In one typical case the figures at 9 a. m. and at 12 and 5 p. m. were, respectively, reclining, 5,900, 7,300 and 9,300. The average of a number of cases in the late afternoon was 8,000 seated and 11,500 reclining.

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90 *Action of External Factors on the Sexual Cells. O. L. Mohr.—p. 1401.

91 *Rupture of Labium Minus during Delivery. J. H. Bidenkamp.—p. 1436.

92 *Elimination of Diphtheria Bacilli in Urine. K. Wildhagen.—p. 1440.

93 *Tests of Liver Functioning. L. Dedichen.—p. 1444. Commenced in No. 11, p. 1241.

90. **Action of External Factors on Sexual Cells.**—Mohr reports research on the testicles of the *Decticus verrucivorus*, a kind of grasshopper or locust. The sexual cells displayed exceptional susceptibility to the action of radium, while none of the other elements of the testicles seemed to be affected by it. The chromosomes in the youngest spermatocytes stretch out and coil into thin rings, and the cell dies regularly. The older spermatocytes seem quite refractory at first, but after repeated exposures they also display atypical chromosome conditions. Exactly similar findings were also obtained when the action of cold instead of radium was investigated. The action occurs only at a certain phase of the development of the spermatocyte, but the susceptibility at this phase seems to be extreme. It is the phase during which the chromosomes are going through their most extensive changes. Mohr compares his findings with Tower's on 200,000 beetles and with the research of others in this line in recent years. He declares that a new basis is being laid with the aid of the Mendelian laws, and that we are now emerging from the blundering maze into which Darwin's deductive reasoning misled us.

91. **Rupture of Labium Minus during Delivery.**—Bidenkap. called to a woman half an hour after childbirth under a midwife's care, found that the left labium minus had slit nearly its entire length and the child had emerged through this slit.

92. **Diphtheria Bacilli in the Urine.**—Wildhagen examined sixty-eight specimens of urine from fourteen patients with diphtheria or who had recently recovered from it. No diphtheria bacilli were found in the urine at any time.

93. **Tests of Liver Functioning.**—The first instalment of Dedichen's long article was summarized in these columns, January 26, p. 278. He here tabulates the findings from other clinics and his further clinical experiences. His conclusions from this extensive research on numerous healthy persons and patients with various diseases, some confirmed by necropsy, are to the effect that urobilinuria is found only when the liver is below par, and that it is a sensitive test for insufficiency of the liver as it practically always accompanies liver disease. Persisting urobilinuria with heart disease, even if slight, indicates liver incompetency, and when prolonged and pronounced the urobilinuria may be accepted as a sign of cirrhotic changes, if a destructive blood disease can be excluded. Alimentary glycosuria also points to liver insufficiency, but as this occurs under so many other conditions it has little differential importance unless quite pronounced. There seems to be some tendency for the sugar to accumulate in the blood under the galactose test, but otherwise the sugar content of the blood approximates normal during liver diseases. Lactose is more instructive for functional test purposes than galactose.

Still more instructive are tests with 20 gm. glycocoll or 50 gm. gelatin. Amino-aciduria follows this when the liver is diseased, and not otherwise. It consequently has great importance for the differential diagnosis, especially as it is found constantly even with beginning cirrhosis and with diffuse infectious-toxic liver affections. Damage of the parenchyma seems to entail it more than damage of the connective tissue. A reduction in the output of urea and of NH_3, accompanied by an increase in the elimination of amino-acid after the glycocoll test, is a combination encountered only with cirrhosis of the liver. He found the best technic for control to be the bromin method for determination of the urea; the Bjørn-Anderson method for determination of the other nitrogen; and, for control of positive results, Bang's micromethod, which he describes in detail. Full details of the various tests in forty-nine cases are appended and the literature consulted is listed. The research occupied nearly two years and was done with the aid of a research fund supplied by the Rikshospital.